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ACE

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POWER

Have these three men produced the ultimate games machine?

FRUSTRATION

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CORRUPTION

Telecomsoft's Yuppie fantasy

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Virus, Whirligig, and
Darkside all in one issue?**

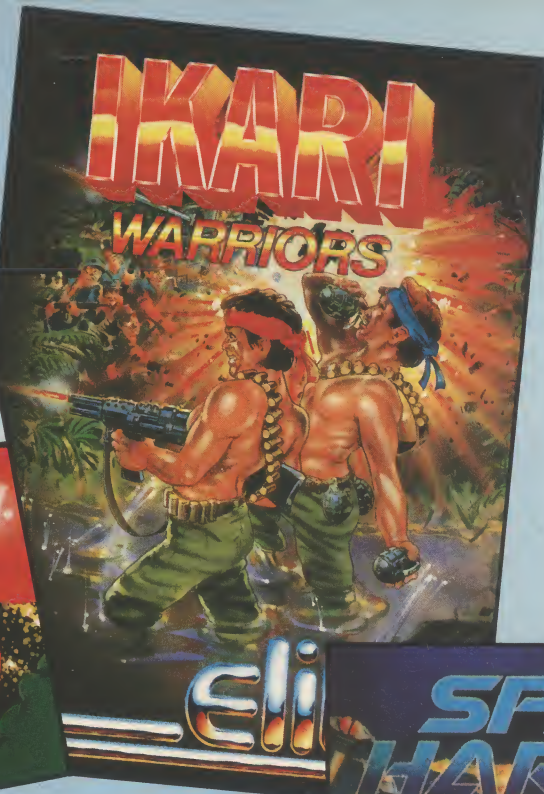
● **REACH FOR THE SKY!** Win £700 of flying lessons – p14

ATARI ST AND AMIGA

If your computer
could choose...

—elite—

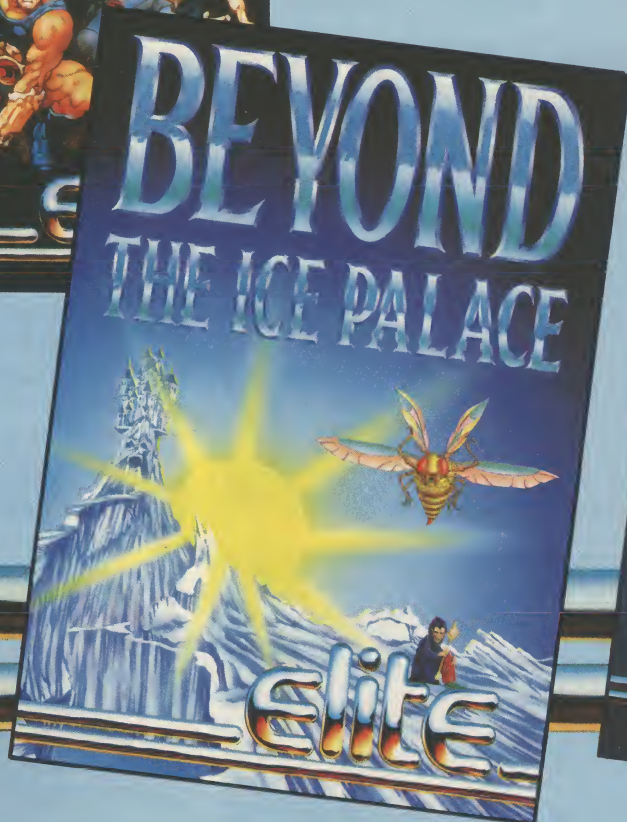
The Computer's Choice!



Atari ST £19.99

*Ikari Warriors
Atari ST £14.99

Amiga £24.99



SPECIALS

30 The Quest for Power

A small Cambridge company have come up with a machine that could **change the face of computer entertainment**. How does it work? What does it do? And will we ever be able to **buy it**?



35 Who's Bad!?

These guys don't just **know** a good game when they see one – they **write** them! Britain's **hottest coders** give us their **honest opinion** of the work done by their competitors.

78 Carry on Screaming...

Just **one more alien** to beat and...Aughh! No! Please, no! Anything but **THAT!** We check out games that make **grown men cry**, **snap their joysticks**, **smash monitors**, and **leap screaming** from top-floor windows. Don't say we didn't **warn you...**

72 Filo-fantasy

Rainbird's latest **adventure blockbuster** has stunning graphics and comes complete with drop-down Filofax menus. Next to a **Platinum American Express card** and a **Porsche 911 Turbo**, it could be just what the Yuppies are looking for...

INTERFACE

7 News

Can Tandy give us all **CD-ROMS**? What is Jeff Minter doing **in church**? Why are Mediagenic **telling tales** – and **who** are they? Who's afraid of the **big, bad birds**? They **told us**, and we're just bursting to tell you...

Birds of a feather get it together on page 8.



ACE

18 Previews

Games of the **future**, splashed in full colour over this month's pages.

101 Letters

With letters like **these**, who needs a **magazine**? We put our **feet up** and let you **fill the pages...**

130 The Blitter End

First the **good news**: you could be an ACE prizewinner. Now the **bad news**: you've reached the end of the magazine.

SIGHT...

21 Back to Basics

Win friends, influence people, and put together the **hottest screen displays** on the street. Brian Larkman's tips on **state-of-the-art pixelling** make it all so, so easy...

24 Hang 'em High

...on ACE's Readers' Gallery page. **Digital masterpieces** from readers put Picasso in the shade.

.....AND SOUND

96 Budget Ivory

At last! Cheetah have emerged with their long-awaited budget range of **master keyboards**. Chris Jenkins gets all **keyed up**...plus a look at Roland's latest box of tricks, a **souped-up** version of the **astonishing MT32**, and news of a **powerful new music card** for the IBM PC.



THE ACE CARD

Win an Amiga!

Turn to page 12 for details of your chance to win one of two Amigas we're giving away – and check The Blitter End to see if you've won an Atari ST or any of the staggering 24 software prizes we offered last month.

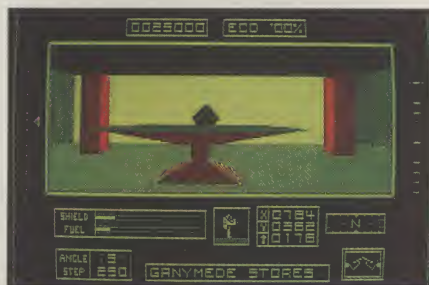
GAMEPLAY

41 Screen Test

Mike Singleton shows off his **true colours** in deep space, plus the definitive review of **Virus** on the ST, Incentive's **Freescaped** **Darkside** and a host of other red-hot releases – all **exhaustively reviewed** and rated by the country's top games testers. Don't say **Aaargh!**, say **Ugh!**



Page 42: **Whirligig** – Singleton lost in space and a long way from **Midnight**.



Page 44: **Darkside** – another brave new world in solid 3D.

26 Arcade Ace

Could be there's a **revolution** on the horizon in the arcades – **you don't just blast** everything in sight in **Vindicators**, you **think** while you're doing it – or so Andy Smith claims. Plus news of **BAS**, **Vulcan Venture**, and – we kid you not – **Bad Dudes Versus Dragon Ninja**.

91 Play-By-Mail

Pop a letter in the post detailing your plans for **conquering** the universe and someone, somewhere, might just take you **seriously**.

85 Tricks 'n' Tactics

Let's face it, if you can't **top the high score table** in **Platoon**, **Mercenary**, **Oids**, **Impossible Mission**, **Carrier Command** and many others, then there's only **one thing** to do...**cheat**.

72 Adventures

What a month! Not only do you get **Corruption** and **Legend of the Sword**, but also exclusive news of new games by the **Bards Tale** team, Infocom, and others.

BUY LINES

12 The ACE Card

It just **can't go on**, we hear you cry. But it can... Yet more prizes, worth hundreds of £££s, for ACE card winners – plus details of **how to get your card** if you're **missing out**.

14 Reach for the Skies!



Ace and Gremlin bring you a competition to help you fulfil your **wildest dreams** - £700 worth of flying lessons, or a

state-of-the-art radio-controlled **sky stormer**. The **choice** is yours, and so's the **chance**...

94 Special Offers

Talk about a **divided Britain** - some people in this country have **never had it so good**. They're the people who save **up to £4** on a **single game**, chosen from the summer scorchers on the ACE Special Offer pages. **Join them**.

93 Subscription

We have a **problem**. For some reason, we aren't content with offering you a year's subscription to Britain's fastest growing micro magazine – we have to go and **throw in** a stack of superb US Gold games at **half-price** as well. **Don't ask us why**, or we might change our minds. Just get that coupon in the post pronto...

ACE PINK PAGES

105 Buyer's Guide

Fifty of the best games available, complete with prices and mini-reviews. We've **played** them, we've **praised** them, now **you can buy** them.

122 Upgrade Guide

So you want to buy a beefier micro. ACE lists the upgrade options, the technical details, the prices, and the software availability. Get the **facts** before you spend the **money**.

124 Random Access

Puzzles, problems, and prizes. You don't just **sit back** and read this magazine, you know – you have to **DO** things as well.

127 Readers' Pages

Look, it's **our** job to fill the magazine, right? So we'll turn a **blind eye** to all these mini-advertisements, helpline offers, announcements, and other trivia. If this section gets any **bigger**, we'll have to get the **lads** round for a spot of **picketing**, OK?



FROM THE BETELGEUSIAN EMBASSY

Earthlings,

Us extra-terrestrials are, as you say, overfed upwards. More than that, we are udderly passed off.

Every sun-cycle our representatives are forced to witness the abominable slorter of our peeples on your monnitters. Of course, we enjoy a few blasts of *Attack of the Mutant Earthling Dudes* as much as any alien bean, but at least we shoot you with your trowsers on.

Us aliens r always portrayed wihtowt our clothes on. So not only are we anneyehillated wivout mercy, but we suffer serious loss of dignity in the processor.

However, this is not the reel reeson for righting.

Our reel reeson is to ask abowt this ACE Card biusiness. We are led to under-stand that these Cards r some form of Inter-Galactic freebie, possession of wich gives the owner the chance of receeiving mega-luxury Earth items for absoutley no charge.

Can this be tru? Are there any Ace Cards left? Plez send several thousand immediately by Red Star.

Grorkingly yores,

Manglet Seiddab'h'Tatcher

The letter above may be **moonshine**, but the ACE Card is **the business**. Every month we give away dozens of prizes - a share-out that **YOU** can join in if you're a cardholder. If you're not, full details of how to get your ACE Card **free of charge** can be found on page 12.

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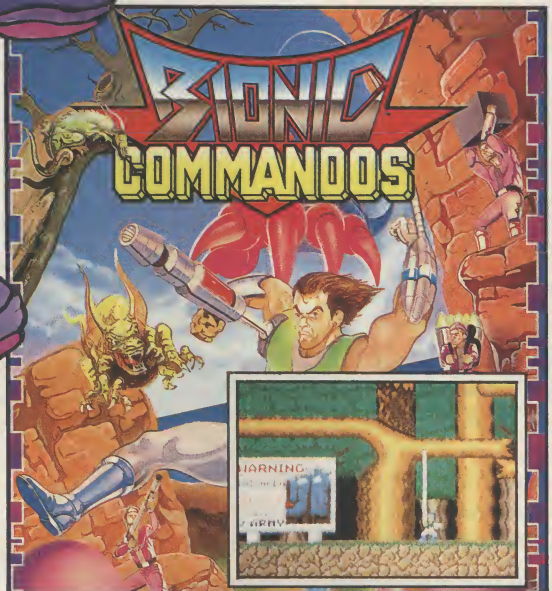
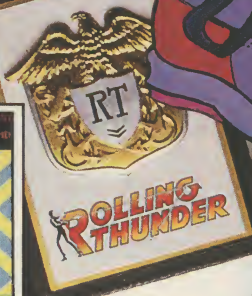
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Interceptor - reason enough to buy an Amiga?

16-BIT WAR!

The gloves are off in the battle for 16-bit supremacy: Commodore have slashed the price of the Amiga A500 by £100, and that's only the beginning of a massive summer/autumn assault on the computer entertainment market.

The cut leaves the A500 with a price tag of £399.99, putting it on a par with the Atari ST for the first time ever, and Commodore have other cards up their sleeve. Announcing the cut, Commodore's marketing manager Dean Barrett described it as 'just the beginning' and promised 'further initiatives in September - all aimed at making 1988 the Year of the Amiga.'

This sudden interest in the leisure market follows a long period of relative indifference, during which Commodore concentrated on selling the Amiga as a business machine, and comes at a bad time for Atari. Earlier this year the ST seemed to have the entertainment side of home computing sewn up, with a 520ST costing only £299 to the A500's whacking £499. In April this changed, when Atari increased the 520ST price by £100. This astonishing and unprecedented move was forced on them, Atari claimed, by a world shortage of dynamic RAM chips. It unquestionably left the ST vulnerable, despite the impressive line-up of games included in the price and the less well-publicised upgrading of the 520ST drive to 1040ST standard.

The question now is whether Commodore have in fact left it too late to make their move. The ST's old £299 price-tag sold a lot of machines, and that in turn gained it

plenty of software support. Titles like *Star Trek*, *Out Run* and *Captain Blood* have sold in very large numbers on the ST, making it big business indeed for the games houses. It's not just the numbers of each title that get sold - a really successful Spectrum or C64 game will normally sell many more than its

ST counterpart - but also the higher ST price. In Gallup's 'sales by value' chart, which takes into account the price of a game as well as the number of units sold, ST titles as a whole are now narrowly ahead of their C64 equivalents, putting the ST second only to the Spectrum.

If most ST games are typically a little over twice the price of 8-bit ones in the shops, they can look even more attractive to the game's publishers. According to one major software house, an ST game earns a programmer three times as much per unit sold as an 8-bit title does. If the royalties here are tied to how much the software house itself makes on the game, it's easy to see why the ST's getting so much software support these days.

The Amiga may be able to offer software houses the same price advantage as the ST, but it can't sell anywhere near as many titles. For most programmers the Amiga version of a game is only worth doing as a spin-off of the ST original, and

wouldn't be worth the programming time in its own right. Does that matter to the end user? So long as the conversion turns up eventually, who cares if it is an afterthought?

With the price difference gone, the crux of the matter for gamers is whether the few impressive games released for the Amiga but not the Atari machine - like *Interceptor*, *Ferrari Formula One* or *Bonecruncher* - can outweigh their ST counterparts (the still unconverted *Oids* for example) and those 20 free titles. With so many buyers also looking to dabble in computer art, the Amiga could just come out of this one on top - and that's not something anyone would have predicted six months ago!



Steve Franklin - Commodore UK's MD - declaring war on games players. We surrender!

HEWSON GO 16-BIT

Acclaimed 8-bit software house Hewson are about to attack the 16-bit market with two original products for the ST/Amiga - *Astaroth - The Angel of Death*, and *Roadstar XRI*. Not only that, but they're also converting some of their biggest 8-bit hits - stand by for *Nebulus*, *Zynaps*, *Exolon* and *Cybernoid* on the 16-bit screen.

Previously they had only released *Ranarama* on the ST and Amiga. Andrew Hewson explained, 'It gave us a feel for the market. It was an experiment and it worked.' So what have they been doing since then? 'We've been deciding what 8-bit material to take over onto the new machines, and what original games should be developed.'

He also said that their intention was to produce games that use the machines to the full, rather than just tacking digitised sound onto an 8-bit game. *Zynaps*, *Nebulus* and *Exolon* will appear on both ST and Amiga, with *Cybernoid*, *Netherworld* and *Stormlord* on the ST.



ST - Zynaps prepares to go 16-bit.

BIG SPLASH FROM BIG APPLE

Hold your breath – there's a new software house in the market who are planning to 'take on' the likes of US Gold and Ocean, offer us 'American raz-a-ma-taz' and 'upset the apple cart'. They're launching with multi-million pound backing and loadsahype. Who are they?

business they turned over a whopping £42 million last year. They claim to be determined to become a 'leading software house within a young but exciting industry.'

Sounds good, but what's behind the hype?

First, there's cash – and plenty of it. Up to £5 million has been earmarked for expenditure over the next year. It's a long time since we saw anybody enter the market with such a commitment and the finance to back it up.

Second, there's a good deal of experience. Character licensing and video are just part of the Prestwich operation – they also own Bush Radio, the hi-fi people.

Finally, there's a commitment to 'originality'. Sounds like more hype – the market is, if anything, improving in this respect already anyway – but Big Apple claim that: 'The game scenarios are totally original – you wouldn't expect to see a computer game based on ideas like these.' The originality, it seems, extends even to the 'designer games pack-

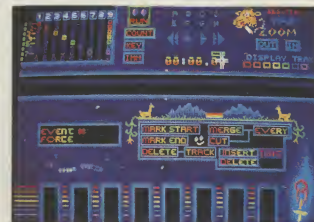
aging' which has 'all-round originality' though it will, in fact, be rectangular. Its special 'flip-top box' has apparently been tested for up to 350 openings and closings. We're impressed.

The first games will be hitting the market in June (*Oops!* – check out the Previews Pages). We'll be waiting.



Big Apple's mascot – Bronx Billy – who is designed to enhance the company's 'street-wise New York image'. He'll also feature in a 'frequent buyer' campaign that will offer free gifts to purchasers.

pen in a couple of year's time, or five year's time with something else. It's got to happen – look at music videos – they're a start, but they're



not close to the music. It's what everyone was trying to do in the 60's with oil wheels, or Jean Michel Jarre with his laser shows, but I'm doing the real thing right now – not just some pre-sequenced light-show.'

ACE is eagerly awaiting its review copy of Trip-A-Tron. Watch this colourspace...

TANDY CD-ROM DOES IT ALL?

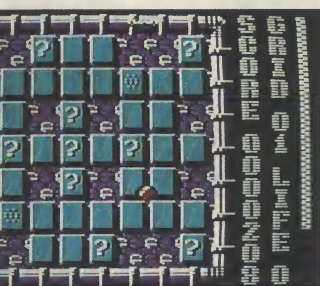
Tandy claim to have come up with a 'revolutionary development in optical disc media' which they're calling THOR-CD. The THOR stands for Tandy High Optical Recording and the big thing about it is, first, that it is compatible with existing CD players and, second, that it promises to be cheap.

We're unlikely to see THOR-CD in this country until 1990, but if we do, we'll get a compact unit that will be able to both read AND write data. That means it won't be a CD-ROM at all, but more like a CD-RAM – or an ultra-high capacity hard disk system. The company reckon they'll be able to offer 'hundreds of megabytes per five inch disk'.

Even more importantly, the access time looks as if it should be on a par with hard disk systems and the system will be able to cope with musical, video, and computer data. Price is uncertain at present, but the audio unit should cost around \$500 – the computer kit will cost more.

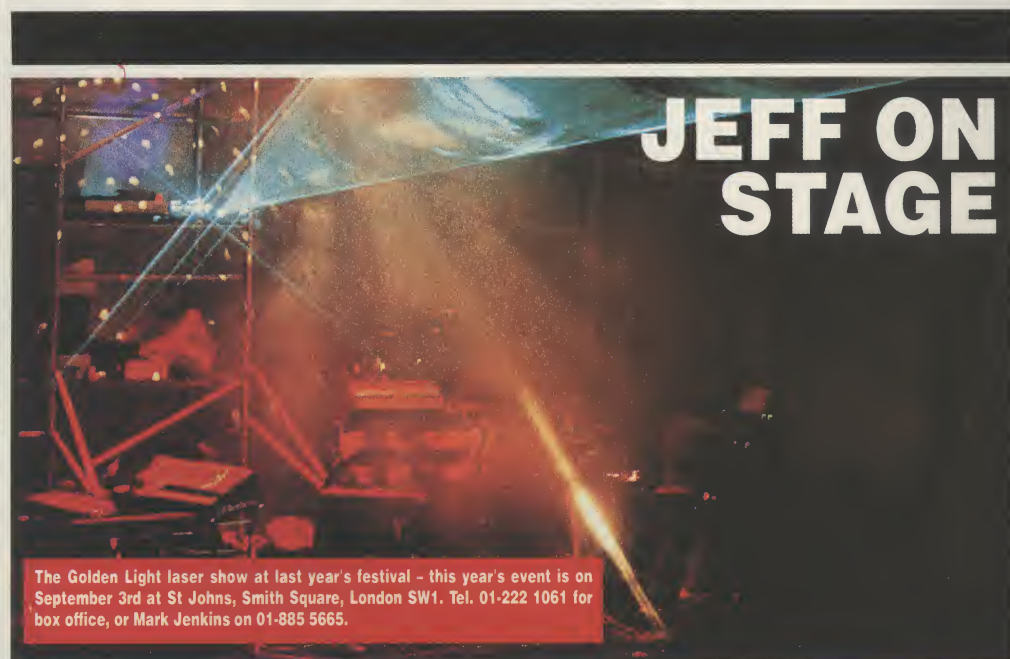
There's just one small problem. The attempts of the Japanese to introduce digital audio tape (DAT) into this country, already reported in ACE, have met with very stiff opposition because of the piracy problem. Surely the same problems will apply with Tandy's CD system?

'I can see that they might be applicable, but we wouldn't like to comment on that at this stage,' said company spokesperson Amanda



Big Apple's first release – *Oops!* – due out in June.

They're called The Big Apple Entertainment Co Ltd, and are part of a group called Prestwich Holdings. Prestwich hail from the record distribution business and with their associated companies in the video and character licensing



The Golden Light laser show at last year's festival – this year's event is on September 3rd at St Johns, Smith Square, London SW1. Tel. 01-222 1061 for box office, or Mark Jenkins on 01-885 5665.

Jeff Minter rides again, this time in a converted church in London's Smith Square, where he will be taking part in this year's Festival of New Age and Synthesiser Music to launch the Trip-a-Tron – an advanced software-based light synthesiser.

Before the cynics die laughing, they should know that the whole

idea of linking sound and light – as Minter did with his original Colourspace series – has taken on a whole new meaning with the advent of MIDI. Using MIDI codes you could now control one of Minter's 'light synthesisers' with a conventional MIDI keyboard.

'It's possible,' elaborates Jeff, 'to sense MIDI data including pitch-

bend and velocity so that you can moderate your light performance according to the music.' He thinks that in the near future the light synthesiser will become a powerful instrument in its own right, used as part of the band line-up for live performance:

'It's inevitable. If it doesn't happen with Trip-A-Tron now, it'll hap-

THE PHONE GAME

Would you like to play games down the phone without using a modem? Well, you can! Until now the phone system's contribution to the world of adventure and roleplay has been confined to MUGs like MUD or Shades. Now the voice games are coming - and you may never think of your phone the same way again!

like *Gods or Trash*.

Unfortunately, most people have a strong aversion to taking out subscriptions and paying for things in advance. BTUs pay-as-you-go facilities using 0898 numbers may now offer games organisers a way round this natural resistance, thanks in no small part to some very clever computer technology.

STONE DEAF?

If you're wondering what all this stuff about 'tones' is, you probably can't dial the Starline service at all: only users of American-style DTMF phones can enter their data this way.

The hardware barrier here is not insurmountable: separate tone diallers let you enter the informa-

tion on normal pulse-dialling phones. That's small consolation for services that rely on casual users - would you run out and buy a tone dialler just to hear your horoscope? - but it could be good news indeed for all you adventurers and role-players out there.

The phone is a natural for creating the atmosphere a good adventure needs. After all, what graphic adventure nasty could compete with a Vincent Price monologue? The problem is in actually making money out of providing such a service. For years, the only way to charge people money for accessing your system was by selling membership subscriptions, with passwords to keep out the freeloaders. Prestel and Compunet both work on this basis, as do independent games

While subscription services have never really mushroomed the way pundits expected, pay-as-you-go systems are a major growth area. Micronet itself has such a system, Hotel California, offering many of the subscription database's interactive areas (or their equivalents) to non-members at a per-minute charge. Both Hotel California and rival online service Desire are highly unusual 0898 services simply because you need a computer and modem to access them.

MUSICAL BONUS

Destiny Software, the company formed by erstwhile Beyond-man Francis Lee, has started to include music with its titles - buy a copy of their next release *Diamond* and you'll get a free cassette featuring *What A Girl Wants* from up-and-coming group **The Company She Keeps**.

In fact Mr Lee is going one step further and actually starting his own music label, Destiny Records. Although *What A Girl Wants* was actually licensed from Cold Harbour Records, future releases will be signed directly to the label, which will not only release singles on vinyl but will also package them along with games from Destiny Software. Francis Lee thus joins the ranks of K-Tel, Beaujolay, Telstar, and Virgin - all of whom have sought to combine the music and software businesses with varying success.



Interactive

The vast majority of pay-as-you-go phone services are voice lines, and most of these offer nothing more than taped monologues recorded by stockbrokers, Page 3 girls or similar. However, there's a new breed of service coming in which, though based on voice rather than modem communication, is nevertheless interactive.

the other problems involved - so Starline's suppliers were forced to use an alternative, higher tech approach.

The service uses the caller's telephone dial as a numeric keypad, decoding the tones made by his phone as he keys in his personal numeric details.

Already an 0898 online game exists. Called FIST (Fantasy

INTRODUCING THE VOOG...

Though FIST doesn't rely absolutely on the use of a tone dialler or DTMF phone, it is slower without one or the other - and that's pretty important given that the service costs upwards of 25p per minute. A far more exciting possibility for the future is the VOOG.

VOOGs are Voice-Operated Online Games and, as the name implies, they use voice recognition technology to allow spoken commands by the caller. Voice recognition is only just becoming practical for commercial use, but already BT experiments have shown just how successful games along these lines could be. With a very short 'training' period to let the system learn your speech patterns, a game can correctly follow directional and other commands with a 95% or better success rate.

VOOGs were first tested by BT a couple of years back, when a small band of select subscribers were able to explore a Cornish village over the phone using directional commands. The system was pretty primitive, recognising only a very few words, and running on an ordinary IBM PC with a voice recognition card tacked on. More up-to-date systems can recognise more words and do not require 'training' for different users - saving time and subscriber's money.

A case in point is the now well-established Russell Grant Starline service available in the London area, which gives each caller a horoscope message based on his or her date of birth. Using a separate line for each possible message was clearly out of the question here - fitting 365 different phone numbers legibly on an advert is hardly a serious proposition, quite aside from

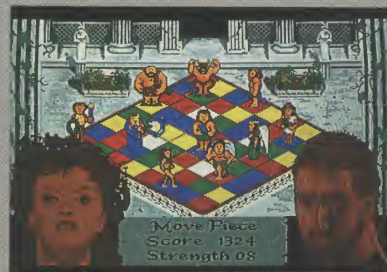
Interactive Scenarios by Telephone, would you believe?) it takes the form of a spoken Steve Jackson text adventure-cum-roleplaying game complete with sound effects. The latter's a crucial element in the whole idea: as anyone who's played Infocom's 'Lurking Horror' will tell you, in the realms of fantasy one sound effect is worth a thousand pictures!

REPEAT POWERPLAY

Arcana are releasing a new version of *Powerplay* for the Amiga. This unusual occurrence has been prompted because, as Arcana put it, "it became more and more obvious to us that Amiga owners were no longer satisfied with games ported over from the Atari, and that it was time to produce a game solely for the Amiga, using all of its graphic capabilities."

The game is initially available via mail-order

only from July 7th (see coupon on ad). It should be in the shops by the end of July. The company are also investigating the possibility of producing more question sets.





WHO'S AFRAID OF THE BIG, BAD BIRDS?

The fur has been flying recently over allegations that Micronet, a company partly-owned by British Telecom, have been using their BT connections to hold down prices in unfair competition against other on-line games publishers.

The idea is that if you can make use of Big BT's buying power, sooner or later you can put everyone else out of business. One newspaper even suggested that Micronet's recent price increase was a direct result of pressure by the industry body OFTEL, following allegations of accounting irregularities in the way Micronet fixed its prices.

All this, as OFTEL themselves pointed out, is nonsense. It's nothing new, however. Similar accusations have often been levelled at

Telecomsoft. Rainbird, Silverbird, and Firebird are beginning to prove a very potent combination and some people in the industry actually seem to be afraid of our feathered friends. They reckon that in Telecomsoft's case, big is bad, bad, bad. Here's a company, they say, which represents a deadly form of cheque-book publishing – a company who can march into the market and spend millions...and so what if they lose a bit of cash? They can afford to. Others can't.

For example, Telecomsoft paid a rumoured £1 million for Beyond. Whatever the real sum involved, they certainly can't have made much money out of that. And what about Odin? Another label bought and then lost in the mists of time. Transactions such as these would surely have sunk any normal software house, but Telecomsoft can just keep marching on, leaving less well-endowed companies to bite the bullet.

'From a commercial viewpoint,' complains one well-placed industry source, 'I doubt if they're making a profit. They're strong in the 16-bit market, where the games are more expensive, but the number sold is far less.'

Telecomsoft, however, are quite adamant that all this is rubbish, understandably when their accusers take cover behind anonymity.

'This is a load of nonsense,' retorts company supremo Paula Byrne, 'Frankly we've heard all these criticisms three years ago. We've gone past all that now and are very happy with our performance.'

'The reason Telecomsoft puts out such high quality product is that top programmers want to work with Telecomsoft as they trust the name of British Telecom.'

'That aside, Telecomsoft has a large development team of 14 people who offer our programmers support and help through the development of each product. Royalty statements are honest, with payments

made on time to allow programmers.

'Incidentally, Telecomsoft pays its own phone bills, rent, accommodation etc., and furthermore it is not in British Telecom's interest to support unprofitable businesses.'

Perhaps the last word should go to Andrew Hewson, who lost two of his best programmers – the notorious Turner and Braybrook – to BT last year. Surprisingly, he's all in favour of the big boys: 'It doesn't matter how big your cheque-book is – if you make silly decisions, you're still going to lose money. The only difference is that those with money can afford to go on making mistakes longer – and if someone in the industry can afford to train people in that way then it can be of benefit to all of us.'

Looks like the training period is over for Telecomsoft – this month sees no less than four strong titles from the Birds – *Virus*, *Whirligig*, *Legend of the Sword* and, imminently, *Starglider 2*. Watch out everyone – these birds are BAD!



Legend of the Sword – more birdseed. Check it out on page 74.

● IS BIG BEAUTIFUL?

Do we really want large companies dominating the games scene, or do we have a secret hankering for the days of attic programmers who sell their own games at fairs and are accessible and (sometimes) responsive in a way that large companies can never be? The good news is that perhaps soon we'll be able to have both.

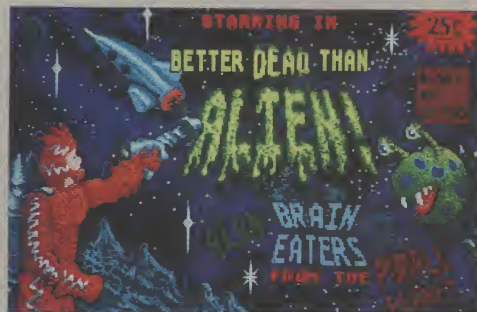
Electra's the name of a brand new software house that just goes to show that even nowadays size isn't everything. What's more, they could point the way to a whole new style of games programming and production that may have important repercussions for us gamers.

Since the big companies have lots of money to spend, a whole host of small companies have sprung up offering programming, marketing, and sales services for the giants. This means that it's now possible to launch your own software house by getting Small Company A to do the coding, Small Company B to do the production, and Small Company C to do the marketing and sales.

That's just what Electra have done. Oxford Digital Enterprises have written the game, a shoot-em-up for the ST and Amiga; SPA are doing the production; and Entertainment International are managing the sales. Hey presto – the little birds gang together and up springs a whole new label.

This sort of flexibility is something quite new in the

games business, where previously launching a label cost many thousands of pounds, required a large office, and lots of in-house talent. It could bring greater publishing power to the small guys – like Arcana of Powerplay fame, for example – who can produce great software but may not have the muscle on their own to publish it. In some ways, it's a return to the days of the attic programmer, Jeff Minter-style – small, imaginative concerns who can move quickly with the market and deliver hot products. Let's hope Electra can set an example that will inspire others to go the same way...



Electra's Better Dead Than Alien, sliming over a shelf near you soon.



SNIPPETS...

Up and coming titles for your micro

GALDREGONS DOMAIN

Pandora

Atari ST

£19.95dk

From the people that brought you *Into the Eagles Nest* comes a romp in the lands of fantasy. It's a quest for the five gems of Zator, which, when brought together, naturally bring you ultimate power. The game is played over six levels where you battle the minions of the wizard Azazel. Features promised are a 32-colour screen, player-monster interaction, hundreds of locations, loads-a-characters and a huge gameplay map. Wonder how they're going to map gameplay?



Atari ST - Galdregons Domain

DEBUT

Pandora

Atari ST

£19.95dk

Also coming soon from Pandora is this mixture of arcade action, simulation and strategy, where you're trying to stabilize the ecosystem of a planet. To do this you have to control the weather system, process food chains, redistribute the population and try to stop wars and pollution. Looks like we can all play at being God again.



Atari ST - Debut

JOE BLADE 2

Players

Spectrum £1.99cs

The original game did well amongst the ranks of budget software and

now the main character's back as a London vigilante. His task is to clear the streets of muggers and punks (since when was being a punk a crime?) and save the ordinary citizens held prisoner in their own homes.

BLACK TIGER

GO!

Spectrum £8.99cs

C64/128 £9.99cs £11.99dk

Amstrad £9.99cs £14.99dk

Atari ST £19.99dk

This is the latest of GO's Capcom conversions and plunges the player into the usual plethora of monsters, demons and dragons. The idea is to rescue wise men who may then sell extra weapons. End-of-level guardians and time limits also get in on the action. Expect this one in September.

THE FURY

Martech

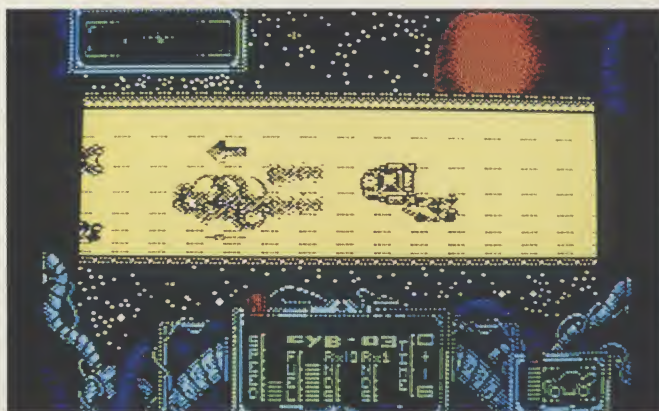
Spectrum £8.99cs £14.99dk

Amstrad £9.99cs £14.99dk

C64/128 £9.99cs £12.99dk

This looks like being the latest in wacky racing games. This one is set on a track floating in space called the Fury where the universe sends its champion drivers. Of course you've got to uphold Earth's honour against all-comers. Knock other drivers off the track, shoot them, play tag or even make a dash for the line on foot if your engine cuts out. No wonder Nigel Mansell isn't endorsing this one - a formula one grand prix sounds easy by comparison.

Mars Cops



Spec - The Fury

19

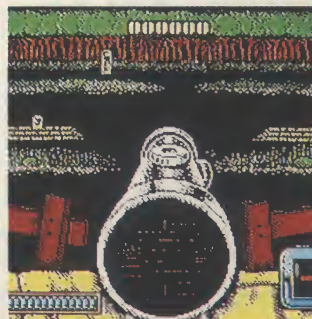
Cascade

C64/128 £9.95cs £14.95dk

Spectrum £9.95cs

Probably the first time a game has been based around a record - Paul Hardcastle's electronic special that went to number one. The game was delayed from last year but is now progressing towards release. The action starts in boot camp with training before you get on to the hard stuff.

Spec - 19



DREAM WARRIOR

US Gold

Spectrum £8.99cs

Amstrad £9.99cs £14.99dk

C64/128 £9.99cs £11.99dk

IBM PC £19.99dk

A shoot-em-up that takes place entirely in your dreams, or is it the offices of Megabuck Inc? Well, either way you're going to run into a lot of demons, aliens, minions, psychobots and all the other nasty things that pop up when dreams turn into nightmares. The final task is to close once and for all the six eyes of Ocular, destroying the power source of the Focus. It's enough to put you off sleeping.

RALLY RUN

Mandarin

Atari ST

£19.95dk

Amiga

£19.95dk

A simulation based on the Lombard RAC Rally, and in which you get to be a back seat driver. That's your viewpoint, but you've still got to change gear, steer, take the navigator's directions and generally not crash. Features will include damage reports and the chance to enhance the car.

MARS COPS

Arcana

Atari ST

£19.95dk

Amiga

£19.95dk

Arcana's somewhat delayed game is nearing completion. It's a one-player space pursuit game in which you have to defend the colony on Mars from the UFOs that have entered the solar system. Arcana say the game is faster and leaner, combining strategy and shoot-em-up. Due out at the end of August.

Mars Cops





WIN AN AMIGA!

**Has your ACE card come up trumps this month?
There are 25 great prizes.**

For everyone who received a free ACE card on the cover of the April Issue, here's another great opportunity to win prizes.

Using the same program as last time, just type in the 25 new 4-letter codes printed on this page. If the program converts one of them into your personal number, you're a winner!

If you missed the April ACE, you can still get hold of an ACE card – see the box for details.

LOOK AT THESE PRIZES!

ONE 1st PRIZE: AMIGA + COLOUR MONITOR

The winning code: **ALNS**

**FOUR 2nd PRIZES: £50 of software – chosen from the ACE
Special Offer pages**

The winning codes: **CZVM• ENAC• ARKR• CZKA**

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Special Offer pages**

The winning codes: **DZNL• EFQG• DSRK• CAWO• BOGW• BDIM
• EIFZ• ABSS• AACC• BYKI**

**TEN 4th PRIZES: A year's free subscription to
ACE magazine**

The winning codes: **AWAD• BBZL• DOIS• AABR• ELAS• CSVW
• DOTG• EKUR• BSHP• DFXS**

HOW TO CLAIM A PRIZE

If you are one of the winners, you may claim your prize simply by posting us your ACE card together with a note saying which prize you are claiming (and from which issue of ACE).

If your prize is for software, list carefully the software you would like from the selection printed in the ACE Reader Offer pages (94-95).

Assuming your claim is valid, we will forward your prize and return your card within 28 days (probably much sooner).

Post to: **ACE CARD PRIZE CLAIM, 4 Queen Street,
Bath BA1 1EJ Closing date for claims August 12th, 1988**

HOW TO OBTAIN AN ACE CARD

If you missed the April issue of ACE, you may obtain an ACE card free of charge by sending us a stamped self-addressed envelope together with a signed statement saying that neither you nor anyone else in your household already owns an ACE card. Apply to:
ACE CARD REQUEST, 4 Queen St. Bath BA1 1EJ
(This offer valid while stocks last).

THE DECODER PROGRAM

This short program listing will DECODE the 4-letter codes printed below next to the prizes. It turns each code into a five-digit number such as the one printed on your ACE card. All you have to do is type-in the program using the instructions for your computer printed below.

Then RUN the program. It will ask you to input each of the prize codes in turn and will then reveal on screen the winning numbers. If your number comes up, YOU CAN IMMEDIATELY CLAIM YOUR PRIZE!

If you are unable to get the program to work, a list of the winning numbers, correctly decoded, may be obtained by sending a stamped addressed envelope to:

ACE August winners list, 4 Queen Street, Bath BA1 1EJ

C64, CPC, ST, AMIGA version

```
10 FOR A=1 TO 25:INPUT "Code";B$
20 B=0:FOR C=1 TO 4:B=B*26
30 D=ASC(MID$(B$,C,1))
40 IF D>90 THEN D=D-32
50 B=B+D-65:NEXT C:PRINT "Winning
Number is";B:NEXT A
```

SPECTRUM version

```
10 FOR A=1 TO 25:INPUT "Code";B$
20 LET B=0:FOR C=1 TO 4:LET B=B*26
30 LET D=CODE B$(C TO)
40 IF D>90 THEN LET D=D-32
50 LET B=B+D-65:NEXT C:PRINT "Winning Num-
ber is";B:NEXT A
```

TYPING IN THE PROGRAM

SPECTRUM

48K: Power on, and type the Spectrum listing in as shown, pressing ENTER at the end of each line. To get the word CODE in line 30, hold down caps shift and symbol shift keys together and press the letter I key. When you've typed all five lines in correctly, press R (for RUN) followed by ENTER. Now type in the codes one at a time, pressing ENTER after each one: the program will stop after you've typed in all 25 codes.

128K: Select 128K BASIC mode from the start-up menu and type in the Spectrum listing as shown, hitting ENTER at the end of each line. Type RUN, hit the ENTER key again and type the codes in as for the 48K Spectrum above.

C64/128

Type the listing in as shown, hitting the RETURN key at the end of each line. Type RUN (Don't use the RUN/STOP key), hit RETURN and then type the codes in one after the other.

AMSTRAD CPC

Type the listing in as shown, hitting the RETURN key (6128) or the larger of the two ENTER keys (464 or 664) at the end of each line. Type RUN and hit RETURN or the large ENTER key again - don't use CONTROL and the small ENTER key here - and type the codes in one after the other.

ATARI ST

Put the LANGUAGE disk in the drive and switch the ST on. Double-click first on the drive A icon and then on the BASIC.PRGM icon to boot Basic. Type EDIT and press the RETURN key. Now type the listing in, hitting RETURN after each line, and press the F10 key when you've typed all five lines in. Now type RUN, press RETURN again, and type the codes in one at a time.

AMIGA

Switch on, put your 'Workbench' disk into the drive and wait for the desktop to appear. Now put your 'Amiga Extras' disk in the drive, double-click on the EXTRAS icon and then double-click on the AMIGA BASIC icon. Type the listing in as shown, hitting RETURN after each line, and then click on the BASIC (rather than the LISTING) window. Type RUN, hit RETURN and then type the codes in one at a time.

OTHER MACHINES

The 'C64, CPC etc' listing is standard MicroSoft Basic, so it ought to work on most micros. If you can't get it to work on yours, write to us for a list of winners – details of this are printed above.

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1. This promotion is open to everyone with the exception of employees of Future Publishing Ltd and anyone involved in the distribution or retailing of Advanced Computer Entertainment magazine.
2. Ownership of the ACE card is limited to one per household.
3. Each four-letter code printed in the magazine corresponds to a winning 5-digit number on one of the ACE cards.
4. The codes must be correctly decoded using the program printed each month in this magazine.
5. Claims for prizes must be received by first post on the closing date at the latest. The value of any unclaimed prizes will be carried forward to future issues.
6. If, due to a production error, more than one person claims a single prize, the publishers reserve the right to divide the prize between the claimants.
7. In the event of any dispute, the decision of the publishers is final.

STARGLIDER 2

In the beginning there was a void, a blank memory without form or purpose.

And ARGONAUT Software looked upon the void and said...

'LET THERE BE FLIGHT'

... and there was STARGLIDER.

And as time progressed, the art of three dimensional solid graphics became known unto the ARGONAUTS, and they rejoiced.

And they said...

'LET US CREATE THE ULTIMATE PROGRAM, TO HAVE DOMINION OVER ALL OTHER PROGRAMS IN THE UNIVERSE'

... and there was a blinding light and the Earth spat fire and trembled.

And as the fire diminished and the vapours cleared, the fruits of their labours emerged from out of the chaos.

THE ULTIMATE CREATION!

STARGLIDER 2...

... A VOYAGE INTO THE THIRD DIMENSION.

BY ARGONAUT SOFTWARE

Atari ST/Amiga £24.95



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TALLY HO!

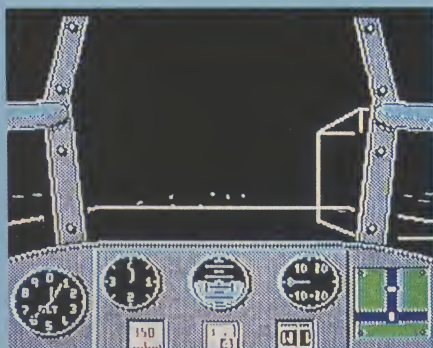
Yes, it's true. You can get yourself on the road to winning your very own Private Pilot's Licence with ACE – in conjunction with Gremlin we're offering the winner of our competition £700 worth of flying time completely free. Alternatively, you could plump for a mouthwatering state-of-the-art radio-controlled plane that really puts the **solid** into solid 3D!

NIGHT RAIDER – THE GAME

Gremlin are offering the prizes to celebrate the launch of their latest game, *Night Raider*, available for the Commodore 64/128, Atari ST, Spectrum, and Amstrad CPC micros and burning into a shop near you as you read this.

The game claims to be the 'ultimate flight simulator – shoot-em-up' and blasts you into the skies at the controls of a sophisticated bomber – your mission: sink the Bismarck.

You'll need to practise navigation and gunnery skills before tackling the Bismarck and create your own flight plan, bearing in mind that the HMS Ark Royal, the aircraft carrier from which you took off,



Night Raider

TAKE TO THE SKIES WITH GREMLIN IN OUR HIGH-FLYING COMPETITION...

may also be under attack and need protection if you're ever to get back home!

HERE'S WHAT YOU HAVE TO DO

To enter the competition, all you have to do is use your knowledge of pilots past and present to answer the three questions on the coupon below. Then enter your name and address and post the coupon to:

**ACE Night Raider Competition,
4 Queen Street
BATH.
BA1 1EJ**

The closing date for entries is 4th August 1988. The prize will go to the first correct entry chosen at random from those received before the closing date and the prizewinner will be announced in the October issue of ACE. Employees of Future Publishing Ltd and/or Gremlin are ineligible for entry – hard luck lads!

THE PRIZE

EITHER:

£700 worth of flying lessons (or simply flying time if preferred) at absolutely no cost to you. We can arrange for the prize to be taken at an airport close to your home. You'll probably be flying in an aircraft like the one pictured below and with your instructor will be able to master the basics of flying technique and theory – great practice for playing *Night Raider*!

Naturally a full pilot's licence requires a greater investment in terms of time and money than is provided for by the prize, but it will certainly give you a headstart should you be serious about flying – not to mention the thrill of lifetime!



OR:

A Kyosho Zero Fighter complete with electric-powered motor and radio-control unit, plus a Futaba state-of-the-art digital radio control system. Domination of the skies around your home could soon be yours! Lets face it, this is the sort of solid-3D flight simulator that's REALLY solid!



ENTRY FORM

NAME

ADDRESS

TEL

Tick the box next to the correct answer to the three questions below:

1. Who took the lead role in the film *Reach For The Sky* about the air ace Douglas Bader?

- a) Marilyn Monroe ☐
- b) Kenneth Williams ☐
- c) Kenneth More ☐

2. Who was the first pilot to break the sound barrier?

- a) Chuck Yeager ☐
- b) Dan Dare ☐
- c) Charles Brown ☐

3. Which pilot carried out a forced landing in a famous international incident?

- a) Ronald Rector ☐
- b) Pete Connor ☐
- c) Gary Powers ☐

SPECTRUM 48K/128

20

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STAR

Brought to you by the team who produced the top-selling STAR WARS® game, THE EMPIRE STRIKES BACK™ is the next stage of the unfolding drama.

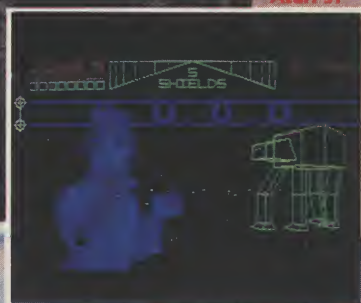
This game follows the non-stop action of the movie and is a direct conversion of the famous coin-up.

The player takes the role of Luke Skywalker, piloting a snow-speeder against the huge Imperial Walkers. Darth Vader controls his forces with deadly cunning, using his Probots to search and attack the Rebel Base.

The action continues as the player becomes Han Solo in the Millennium Falcon, looking for safety in the galaxy whilst being attacked by Tie-Fighters and dodging asteroid storms.

May the Force be with you – Always!

WARS®



Programmed by
VECTOR

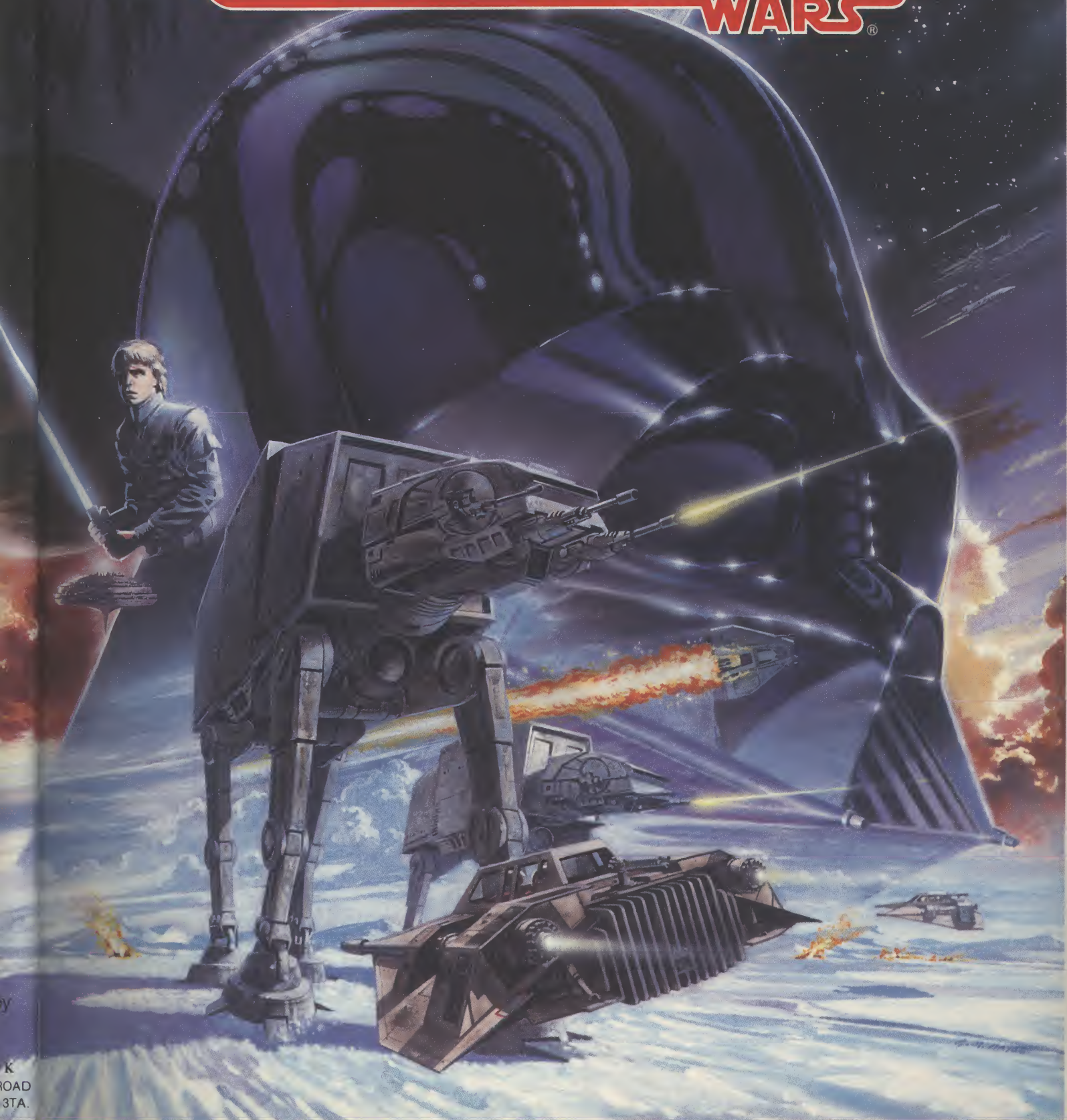
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STAR
THE
EMPIRE
STRIKES BACK
WARS



by
K
ROAD
3TA.

**BARBARIAN 2**

Palace

Yo Larry, he's back – and he's got a big sword. Not only that but the princess is tooled up and ready to go bad guy beating as well. In this version our heroes are free of the confines of one-screen action and can roam a mappable playing area taking on all manner of head-clearing monsters. Prepare to be shocked – or at the very least run through with a broadsword.

ST – have at thee, foulbreathed demon.

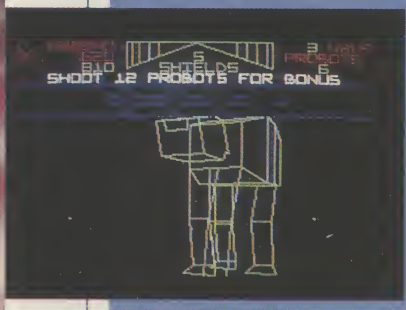
HIT FOR SIX

THE EMPIRE STRIKES BACK

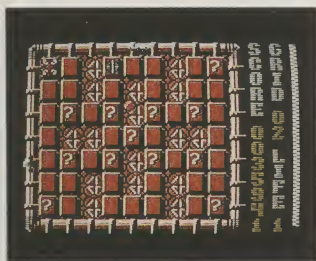
Domark

Hardly has the wreckage of the Death Star settled, than up pops the Empire keen for a new fight. Once again, the game is based on the hugely successful coin-ops, themselves based on the films. Vector graphics are much in evidence as you tangle with the fighters, walkers and anything else Darth Vader can think of to throw at you.

Spec – a walker lumbers towards you, but how do you bring it down?



The software houses have won the toss and elected to bat. We'll soon be hearing the thud of packaging on shelves – 'and what a fine delivery that is'. Will they be making impressive scores of 900 not out, or trudging back to the pavilion with a duck? Better get your helmets on and prepare for some fast scrolling. There will be some pretty fine efforts, hits for six and the odd game that gets caught out, bowled over, stumped and run out by silly points. Now over to Radio 4 where during the tea interval Brian's about to enjoy a nice slice of cake and a game of *Virus*.



C64 - is anywhere safe to tread?

OOPS!

Big Apple

New software house Big Apple will give plenty of players the pip with this devious arcade puzzle. You've got to travel on the blocks to pick up objects, while avoiding the holes and other dangers. If you go on a question mark it could be good, but it could be disaster. Looks like an interesting beginning for the new boys.



Amiga - Defender returns to send arcade addicts diving for their joysticks

STAR RAY

Logotron

Defender makes a comeback in this scrolling shoot-em-up. Remember all those little people to protect? Those hordes of aliens to zap? Those nasty mutating things that never knew when to stop coming after you? Well here it is all over again, but with classy 16-bit backgrounds.

TETRA QUEST

Microdeal

The latest from the producers of *Leatherneck* and *Goldrunner* is a weird mixture of shoot-em-up and exploration. The strange thing here is that your craft is confined to a grid and has to collect objects without encountering the other robotic inhabitants of the pathways. Judicious use of teleports and lasers helps things move along.



ST - a grid of hazards to test your reflexes.



1943

GO

Another of the Capcom coin-op conversions. These ST screen shots show that you can expect plenty of weapons and juicy explosions. Historians may care to note that the action is supposed to take place at the Battle of Midway, while gamers may like to know that you can still do loops and collect weapons by slamming lead into enemy planes.

ST - it doesn't look like this big bomber is going to survive much longer.
INSET ST - lots of little planes, but with triple shooting they're easy meat.

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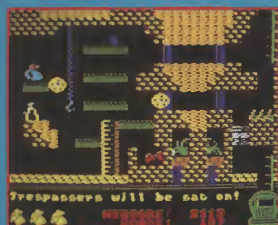


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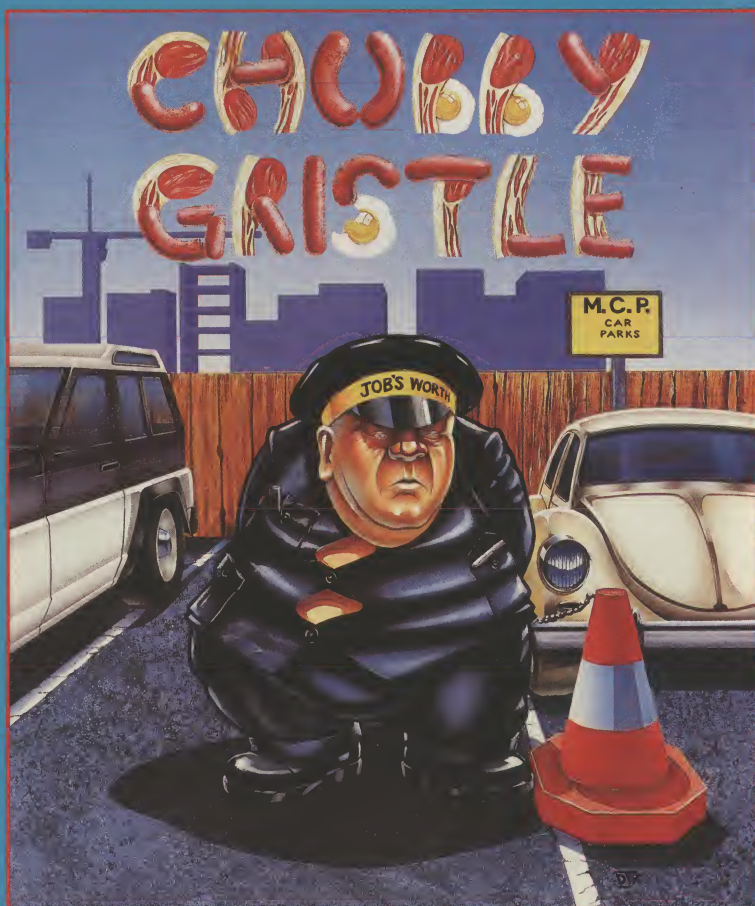
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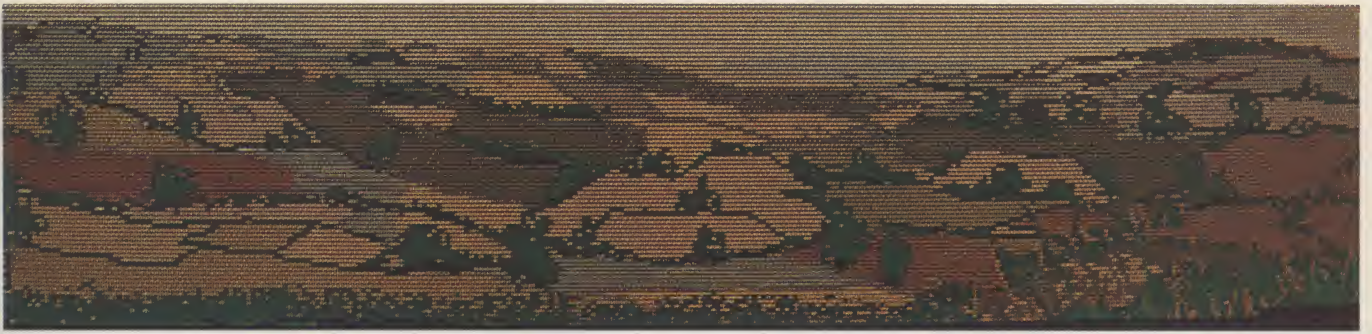
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BACK TO BASICS

After a few months' break – you HAVE been diligently practising all the tricks revealed in the first three instalments HAVEN'T you? – it's time to go back to basics...literally.

Behind every good picture sits a good behind: with a well thought-out background, flatly-drawn objects can jump out at you and dull subjects positively glow with added meaning.

However, if you examine the majority of published computer-generated pictures – whether they are

Spectrum-drawn doodles or state-of-the-art raytracings – two sorts of background predominate: an almost flat horizon at infinity, or none at all. The classic examples are checkerboard surfaces reflected in mirrored balls and 'the last frontier' – space! The reasons for using such simple backgrounds are themselves simple – lack of skill, and the need to emphasise depth in the most memory-efficient way.

Historically, most well-known computer artists were not in fact artists, they were scientists and programmers, until recently the only people with access to machines capable of computer graphics. However far-seeing and imaginative they were technically, artistically their vision was limited. 'Science fiction' images predominate, especially of 'space' where many of the artistic rules can be abandoned – there is no 'up' or 'down', for example. The visual limitations of these early artists were further exaggerated by technical constraints. Early computers were very short of memory so pictures had to create visual effects very economically – the Lines of Sight box gives some elementary examples.

LINES OF SIGHT

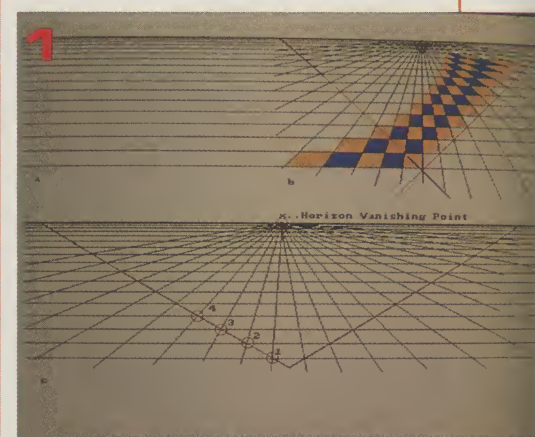
Since images are created on-screen as a series of horizontal lines scanning from top to bottom, the easiest and most memory-efficient way to program a simple background emphasising depth is to draw a series of horizontal lines with progressively increasing intervals between them. Although modern drawing programs are much less constrained by memory size this principle is still of use – see picture 1a.

The illusion of depth created by horizontal lines can be enhanced with a series of lines radiating from a point on the horizon to provide perspective. If colour and area fills are available then the spaces between the lines can be filled. With just 2 colours and this simple pattern of lines a very effective sense of depth is created by the checkerboard picture 1b.

Checkerboards and mirrored spheres are now perhaps the worst clichés of computer graphics. Nevertheless this basic perspective grid can be very useful as an underlying structure in any landscape drawing. It can be constructed quite simply and stored on disk to be brought back as a starting point for many landscape pictures.

The horizontal lines can be drawn with any progressively increasing interval between them. Picture 1 uses the simplest progression: 1, 2, 3, 4, 5...etc but the same numbers squared (1, 4, 8, 16...etc) would also work. To draw the perspective lines to the vanishing point with the correct spacing can be difficult. A diagonal line passing through the grid square that you are 'standing on' would pass through the opposite corners of one square on each parallel row to a point on the horizon close to the edge of the screen.

If you draw these 'construction lines' (shown in red on picture 1c) it is relatively easy to draw the radiating perspective lines from the horizon vanishing point through each point that the construction lines cross, e.g. from x through 1, 2, 3, 4, etc. (circled in red). The angle between the red diagonal construction lines should always be greater than 90 degrees or distortion will occur.



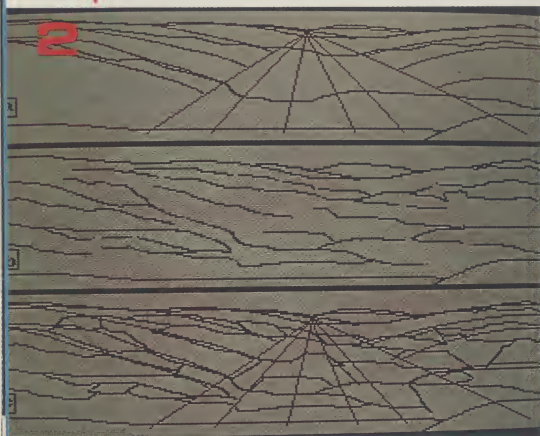
- a. Horizontal construction lines – each gap is one pixel wider than the one above (0, 1, 2, 3, etc)
- b. Perspective construction lines showing checker board effect.
- c. Perspective grid. Red diagonals should be at greater than 90 degree angle to avoid distortion.

For many drawings it is not really necessary to use such an elaborate grid as that described in the Lines of Sight box, however. If the basic form is known, simple construction lines can be drawn and the details of the landscape built up over them depending on the type of terrain. Picture 2a shows a much simpler construction for a flat bottomed valley with gentle hills on either side.

At this stage it is easy to try out several different points of view. Positioning the horizon line near the top of the screen can give

the impression that you are looking down into a valley from a hilltop or aeroplane. A low horizon and high hills gives the opposite effect. Working from a photo or postcard can be very useful when making these decisions. Try to determine the structure of the photo and draw it in ready to copy.

If the background is to have no detail at all then the hills can be filled with colour (or patterned fills) with decreasing colour saturation (more white) toward the horizon. This sort of sparse, washed-out or misty background can prove very effective in some circumstances, but increased detail makes for a more interesting composition. Using the underlying structure of the construction lines, gradually build up a series of lines representing smaller hills, hedgerows, field boundaries, rock outcrops, sand dunes, etc... Try not to include too much detail at this stage, just structure.



Stages of building outline landscape features around construction guide lines. Red lines can be removed later using lock/exclude colours.

- a. Outline features filled with a range of colours or fill patterns, taking care to make those in the distance have a lower saturation than those in the middle ground.
- b. Addition of detail, bushes, trees, rocks shadow etc..
- c. Dark outlines removed from distant features to emphasise distance (use exclude/lock colours)



DIS PLATE

So you have been avidly reading our series on how to draw and paint pixels, practising every spare minute, and filling dozens of disks with your art work? And now you want to display it, show it off to the neighbours, exhibit it at your local gallery, DO something with it – but what and how?

Over the last few months a flood of packages have appeared designed to help us to make our static artwork look more interesting. The range of this software is so wide that it is impossible to keep up with reviewing it all. Instead we are going to try to mention as much as possible in a series of newsflashes here in the graphics section.

The Amiga in particular is blessed with loads of graphics utilities, packages designed not to draw with but to manipulate existing drawings. These fall broadly into two categories: image enhancement and 'Super-slide shows'. Some of the most recent items in the second group are mentioned below, and those in the first will be mentioned, together with other software and hardware items in the coming months. But first, what of the Atari ST?

In spite of its wider software base, the ST seems quite definitely to be falling behind in the area of graphics utilities. Why? Several excellent new drawing systems have appeared recently, most notably the omni-colour *Spectrum 512* and *Quantum Paint*, but when it comes to utilities nothing is in sight (Please put me right if you know different. I am willing to review any interesting and innovative graphics software for machines other than the Amiga if only I could find some!).

Once you have built up a range of images – whether grabbed using a digitiser, collected from bbs and P.D. or drawn by your own fair mouse – you can begin to present them in an interesting way. Standard 'slide show' methods are okay but what is really needed is a bit of 'production' like they use in pop videos and television.

The simplest sort of classy production is the use of fancy wipes and fades, flips and scrolls spins. *ANIMATION: EFFECTS* (Hash Enterprises/Amiga Centre Scotland £35) provides a basic access to all these special effects with Martin Hash's usual simple no-frills user interface but without much in the way of control over speed and timing. A bargain price though!

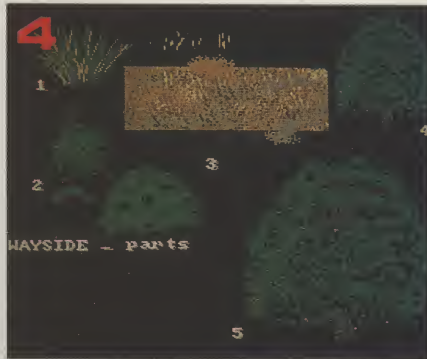
More versatility is provided by *TV*SHOW* (Zuma Group/Microdealer £88.95). Over 50 special effects are available, most of which are smooth and flicker-free in operation. Controlled via menus and excellent icons, the program is fairly easy to use, though some problems can arise if your palettes change greatly from picture to picture. A nice touch is the ability to add a spoken running commentary.

Even more control is on hand with *THE DIRECTOR* (The Right Answers Group/Amiga Centre Scotland £47) though at the expense of any sort of user friendliness. *The Director* is, to quote, '...a professional display and animation language...'. This seems a little forbidding for us spoon-fed Amigites but even a very rudimentary knowledge of BASIC (to which the language used bears a strong resemblance) allows some excellent presentations with little effort.

The most unusual utility is another in Martin Hash's Animation series – *ANIMATION: STAND*. One of the commonest TV and conventional animation effects is pan and zoom across the scene. Previously no software has allowed a smooth and effective pan or zoom across a picture. Usually, drawing programs zoom in to an area by enlarging pixels. *STAND* uses a special 'interpolation' technique to 'maintain the integrity of the detail without causing jaggies'. In practice the method works very well, creating a unique way to view your artwork.

If the construction lines are drawn in a contrasting colour like red, it is easiest to sketch over them in one base colour that suits the drawing such as yellow, olive green or mid brown. (Black is used in pic.2 for clarity). When the outline is complete (pic 2c) the red lines can be removed by locking or excluding all the other colours and painting red out with the background shade.

The next stage is to fill the areas you have sketched in with body colour, solid if



Wayside Parts. These brushes were used to achieve mid- and fore-ground detail. Paste trees and bushes twice. First to define position. Spray shadows on roughly in position. Second paste with tree exactly matching the first. Shadowed areas shown through gaps. All brushes can be scaled and flipped for variety.

HOW TO DRAW TREES

The tree in **WAYSIDE** was formed from a crescent shaped brush – smooth on top, broken underneath – like that at 4.2. This is repeatedly pasted down in an overlapping fashion (almost like fish scales) modelling the desired shape of tree. Branches can be drawn into the black gaps left and a trunk added. When this tree is pasted down, all of the background details show through the black/transparent areas, eliminating all shadows. This can be overcome by lightly spraying out with a dark shade the centre area of the tree just pasted then repasting the tree exactly on top once again; this time the shade shows through. If you have enough colours this process can be carried out when composing the tree originally but this tends to exclude all of the area behind the tree whereas you really need some of the background terrain to show through.

Final picture can be used as a background to any desired scene. It can be changed in any number of ways to recycle it in future pictures. ▼

you have a reasonable palette (16 or 32 shades) or pattern fills if 4 shades is your limit. Each of the areas to be filled must obviously have a continuous border. Temporarily changing the outline to a darker shade makes gaps easier to find. Even if you do not want a misty effect, making the distant colours lighter than the close ones enhances the feeling of depth. Nevertheless, the real landscape usually has a wide range of tones on a clear day so do not be afraid to use lots of shades if you have them. Picture 3a suggests this diversity without losing its depth.

The final job is to add the details of hedgerows, trees, woods, rock outcrops, roads, buildings, and most importantly shadows. If it is a bright day everything will produce a shadow. If you have a sophisticated omnicolour package like *Photon Paint* for the Amiga or *Spectrum 512* for the ST, you will be able to paint the shadows on very effectively. *Deluxe Paint* and *Degas Elite* allow a degree of shading but the palette needs to be set up properly first. An alternative method was discussed in the first instalment of this series, using patterned fills with alternative dark colour and transparent pixels. This places a dark fill over the area but allows some of the original colour to show through. A finishing touch shown in picture 3c is the removal of dark outlines, especially on distant hills.

5



The complete picture is *WAYSIDE*. The background we have produced sits behind a mid-ground area of bushes, trees and field. The windows/brushes used to produce these details are shown in picture 4. In fact this was by far the easiest part of the image to produce as it is made from only three or four simple elements, a clump of grass, a bush, a tree branch and a section of meadow.

These are all pasted down repeatedly, sometimes slightly altering their scale or flipping them for variety. With a bit of practice, this sort of drawing is very easy.

The great advantage of producing a background on a computer is that it can be recycled in other pictures. All the stages in the production of an image should be saved as you go along as a matter of course. When

the final display is achieved the most important earlier stages should be kept for later use. Sometimes just flipping them horizontally and changing a few colours is enough, but more complex alterations can easily be made so that a particular background can be reused many times. Next month we shall look at some of the possibilities and transport rural England to some exotic locations. ●

HANG 'EM HIGH!

So you think you're a pixel prodigy, eh? Get a load of this month's selection of digital masterpieces and think again...

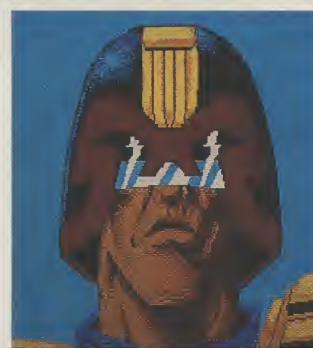
SUPERSTING

Considering this was Norwich-based Michael Pease's first ever picture with *Degas Elite*, we were very impressed indeed. Michael notes that '...colour graduation, for example from yellow to orange, was achieved using *MAGNIFY* and not *SMEAR*. The *SMEAR* mode I find rather clumsy and haphazard, especially in detailed work.'



CARTOON CAPERS

Cartoonists often design their characters using certain basic shapes (e.g. circles, ovals, and so on) that make the image easy to replicate and scale accurately time and time again. This approach obviously lends itself well to computerisation, so it's no surprise that we often get sent readers' impressions of well-known cartoon characters.



2000AD's superlative Judge Dredd perfectly pixelated by 17 year old Dean White of Sunderland on the Atari ST.

Howard the Duck - another Dean White reproduction on the ST.



Ian Young of Maidenhead artworked this one on an Amstrad CPC using the AMX mouse art program.

Apex Computer Productions of Chelmsford (a.k.a. the Rowland brothers) turned out this Porsche R69 freehand, using *Vidcom 64* for the Commodore.



VRRROOOOM!

Cars seem to be one of the most popular subjects, and these examples only go to show that you don't need a state-of-the-art 16-bit machine to come up with a decent image...

SEND 'EM IN...

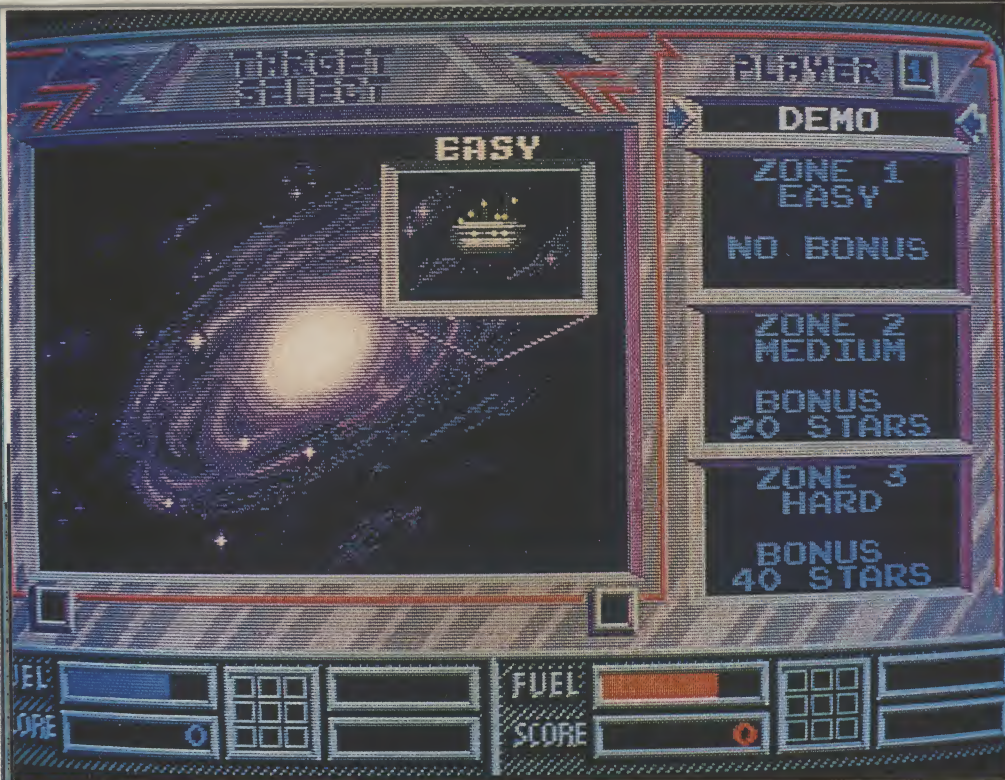
You too can achieve everlasting fame by having your sensational screens displayed in full, dazzling colour on these pages. If you want to make a splash in the world of computer art, this is the place to start. Who knows? Someone might spot your masterpiece and offer you work. At the very least, you get into print - and that looks good in any portfolio.

Send in your work on tape or disk to: Artworks, ACE, 4 Queen Street, BATH, BA1 1EJ. Screens should ideally be stored along with a display program to save time at this end, though we do have copies of most of the popular art packages. Don't forget to include some tips on how you drew the pictures so that others can benefit from your skills...

QUADRALLION



LOGOTRON LTD GREYHOUND HOUSE 16 GREYHOUND ROAD LONDON W6 8NX



Going for the easy level might mean you stay alive longer, but you get no stars.

BOMB THE BASE!



Two players up against some tanks. Don't leave without collecting those fuel pods.
INSET The blue tank's found the key - now he has to find the exit.

VINDICATORS

Atari 30p

Playing this one or two-player 3D tank game is no picnic until you get to grips with the controls, which consist of two joysticks per player. The player pulls and pushes the joysticks in order to move his/her on-screen tank around the multi-level stations searching for the command centre on each level - bomb enough command centres and you might just stop the invasion by the evil Tangent empire (but it's unlikely).

The levels are sub-divided into sectors and to exit from each you'll need to find at least one key to open the exit door. Practice with the controls is essential before you attempt any of this because the sectors are guarded by various tanks and gun emplacements designed to make your life difficult. Shooting the enemy tanks is tough to start with because your turret is fixed, but if you

drive over the stars that can be found lying on the ground, you can buy yourself some juicy add-ons at the end of the sector. These include a gun rotating option which allows the player to rotate the turret independently of the body of the tank simply by pressing the uppermost of the two buttons that are on each joystick.

You can save your stars from each level until you can afford to buy something you think's really important, like armour or extra speed. It's just as important to collect fuel though - run out during a game and you lose your one and only life.

Vindicators is not your usual run-of-the-mill arcade game. Sure, it looks and sounds great, but the action is not as manic as you



And here it is. Red's gone through already.

BAS

Taito
30p

Who said there were only seven different types of novel? Perhaps there are only the same number of coin-op scenarios. This one surfaced a long, long time ago and was called *Pac-man*. Nowadays we've got 3D *Pac-man* games, but here's one that reverts to the old 2D maze idea with power pills to be collected and various nasties to be avoided. The '88 re-incarnation puts the player in a Sinclair C5-like motorbike with a front firing gun, and end of level guardians to defeat. It's great fun to play and a great nostalgia trip.

VULCAN VENTURE

Konami
30p

No, it's got nothing to do with *Star Trek*. This continually sideways scrolling shoot-em-up has got a lot to do with *Salamander* and *Nemesis* though, and is just like these earlier Konami games with a few extra frills. Your routes through the game are far more complicated and the extra weapons even more devastating, but you're still going to have your work cut out and you'll have to be very sharp to defeat the end of level guardians.

might expect and you'll need to think a little as you trundle around the scenery. In this respect it's like a breath of fresh air. For mind-numbing action you're better off playing something like *Operation Wolf*.

OPERATION WOLF

We brought you news of this machine back in Issue 9, but unfortunately we were unable to show you any photographs of the game in action – until now.



Blowing up a personnel carrier with the rocket gun.



Destroying a fuel truck with rifle fire.



With 24 soldiers, 4 helicopters and a tank left to destroy, you've got your work cut out.



A bonus level – collect all the stars and fuel pods before a short time limit runs out and closes the doors on you.

BAD DUDES VERSUS DRAGON NINJA

Data East
30p

Titles for arcade games get worse don't they? This simultaneous two-player beat-em-up plays rather better than the title suggests. Work your way through hordes of baddies in this left-right scroller, punching and kicking them into oblivion. If you're lucky you may be able to pick up an extra weapon like a sword or dagger to make your job easier. We hope to bring you a further report on this machine in the future.

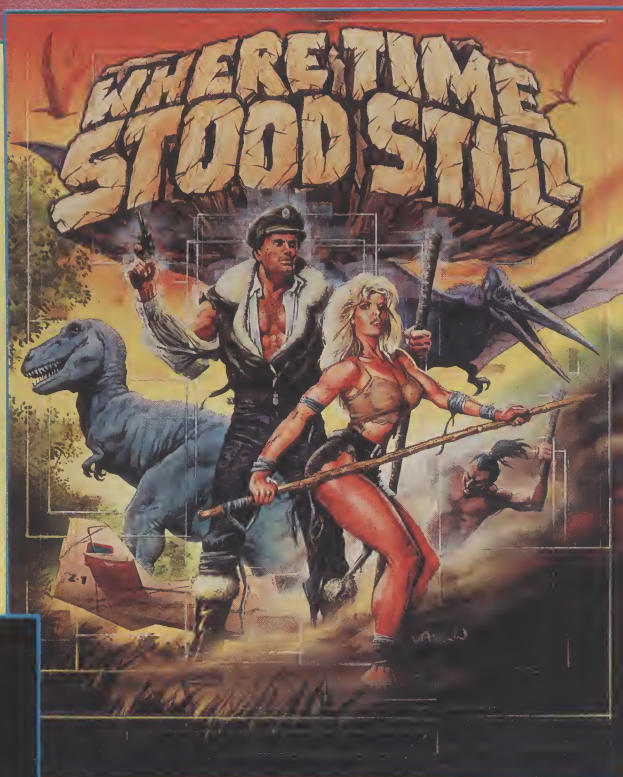
ATARI ST

EXPLORE THE

OF

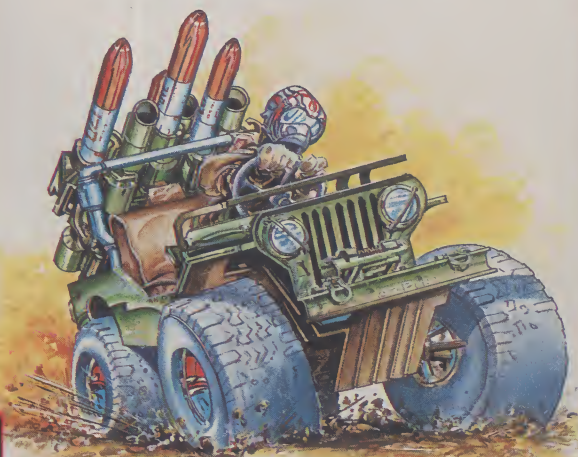


Your plane has ditched on a mountainous plateau somewhere in deepest Tibet. You and your companions are alive but recovery from the impact is short-lived - a large shape is moving towards you, as it gets closer you rub your eyes in disbelief; a Dinosaur! - where are you...and when? Now you learn to survive in a world untouched by modern life - a world frozen in time. Stunning graphics and startling action in this thrilling innovative game.



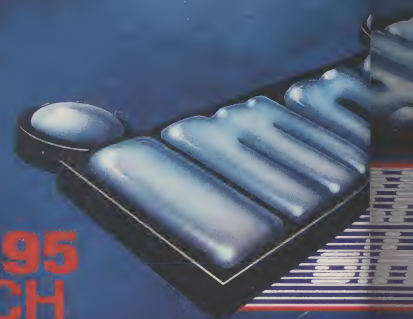
ARMY MOVES

You are one of the Elite - a handpicked, crack trooper in battle against a formidable enemy. You'll need all your skill to take advantage of every situation, stamina to keep on going where others would fail and courage to face the ceaseless bombardment by enemy troops, helicopters and artillery and if you survive Army Moves you'll have some great tales to tell!



DYNAMIC

AND BE
HIGHEST
YOUR

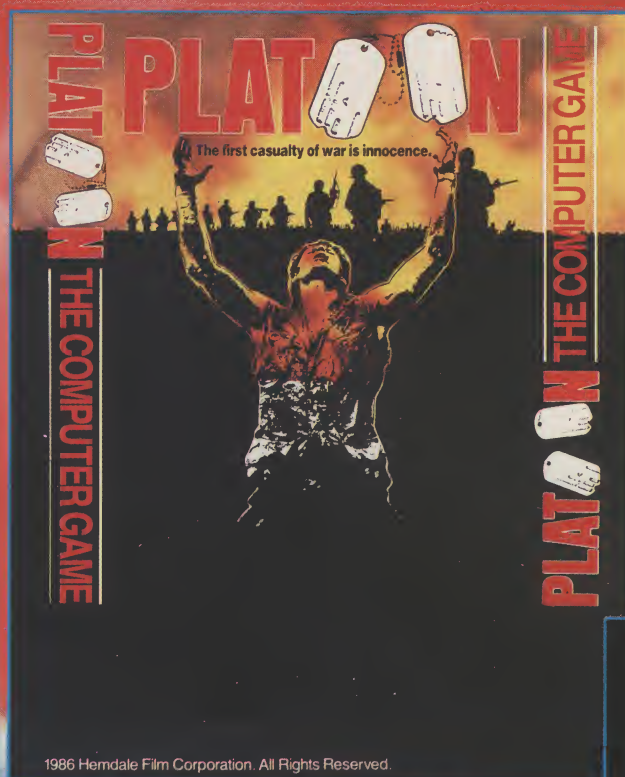


**£19.95
EACH**



THESE TREASURES

THE



The Award winning film by Oliver Stone has been stunningly transcribed to the software entertainment medium creating a Blockbuster Computer Game. Hailed as the "Best Film Tie-in to date" — the program has received brilliant reviews on all formats. Special boxed pack containing a FREE film poster, game picture and audio cassette of Smokey Robinson's classic song "Tracks of my Tears"



BEYOND THE ST HEIGHTS UCAN



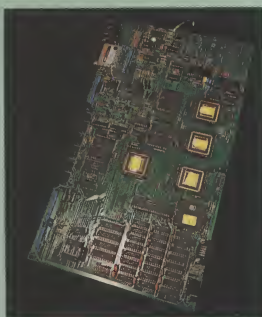
Eons have passed... yet despite apparent annihilation in the original ARKANOID game; Dimension-controlling force "DOH" has come back to life, and occupying the huge space-craft ZARG, has entered our Universe. ARKANOID type space-fighter MIXTEC runs through long forgotten computer data until it finds the answer to this threat... "VAUS 2" is launched and speeds towards the threatening alien presence, before it can extract its revenge... "The Revenge of Doh"



FLARE

You read it first in last month's ACE: there's a brand new micro out there that could knock the whole computer entertainment world for six, and it's so unconventional it seems to defy logic. Designed from the outset as a mass-produced machine, it's already attracted interest from manufacturers as large as Amstrad and Atari - but will they take it up? And what will we see in the shops if they do? Andy Wilton investigates...

ARCHITECTURE



The Flare board, complete with its four copper-coloured custom chips.

The Flare One is not really one micro but two. The 8-bit side of the machine is shared by the Z80, the blitter, the video chip and the jack-of-all-trades 'glue' chip. The Z80 does the fine decision making here, while the blitter handles video operations and other large, repetitive memory-crunching tasks. They take turns: the Z80 sets the blitter running as desired, and the blitter then freezes the Z80 until its task (the 'blit') is done.

Unlike many Z80 machines, the 8-bit half of the Flare One runs at very nearly full speed despite the video chip's need to access screen memory. Where the Z80As in the Spectrum and CPC are both 'locked out' for quite significant portions of time, the Flare's Z80B - a chip that runs 50% faster in any case - and its blitter have things almost entirely to themselves. There are also favourable comparisons here with the Amiga, which can suffer significant losses of processing time because of video access, and

the Archimedes which suffers very heavily indeed on this front.

That might be the whole machine as far as most people are concerned, but there's another side to the Flare One which could prove to be crucial. The machine has a separate 16-bit set-up consisting of its fourth custom chip - the digital signal processor, or DSP for short - and two tiny portions of very fast, very expensive static RAM.

The DSP's technically both sophisticated and complex - hardened techno-freaks can check out the box for details - but the big picture goes like this. The DSP can crunch numbers at a terrifying, Archimedes-beating speed, making it very handy for a number of tasks. It could handle all the 3D calculations for a vector- or solid-graphics game, put together some very complex sound waveforms,

or clean the video 'noise' out of a frame-grabbed image. It could probably also turn its talents to big number-crunching problems like ray-tracing or fractal generation, both of these being natural applications for a machine with such a good graphics display.

The DSP is a great deal trickier to program than any other processor in the modern micro world, but it's got enormous potential. Not only is it tremendously fast, but because it's a separate unit it can leave the Z80 and blitter free to do other things while it takes care of the number-crunching. That's not just power - that's useful power!

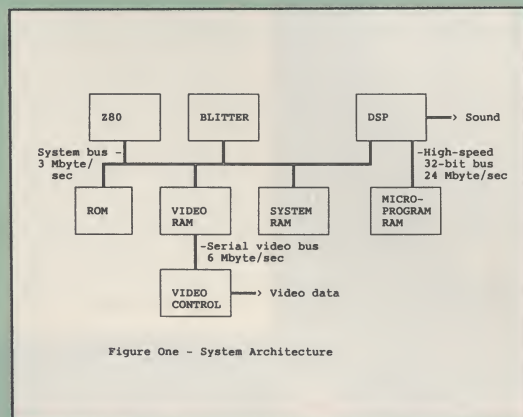


Figure One - System Architecture

The Flare One's Architecture

The Flare One is an 8-bit micro. Yes, it can move sprites and block graphics faster than an ST, and in 256 colours at that. True, it can draw lines three times faster than an Amiga. Sure enough, it can handle the maths of 3D structures faster even than the ultra-speedy Archimedes can. But it is an 8-bit micro, honest. Its central processor is a Z80 - decidedly 8-bit, as any Spectrum or CPC owner will tell you - and though it's got a blitter, that's 8-bit too. Now everyone knows that 8-bit micros are old, slow and generally things of the past, so how come this one knocks spots off the 16-bit competition?

The answer lies in the Cambridge suburb of Cherry Hinton where Martin Brennan, Ben Cheese and John Mathieson - aka Flare Technology - have been putting their hardware theories into practice. The technical side of their success involves an unconventional design and some very powerful custom silicon (see boxes and overleaf for details) but this all stems from something very simple: a belief in computers as pieces of leisure equipment. Atari and Commodore want to sell their glossy 16-biters to businessmen, Acorn see the Archimedes fitting in best in the classroom, but Flare just want to entertain people. By focussing on games, graphics and music performance to the exclusion of almost everything else, they've managed to stand accepted wisdom on its head.

Something like five man-years of effort have gone into the Flare One board, and it shows. The thing is complex. That's not to say that the board's crowded with fiddly little bits, but rather that the Z80 and four whacking great custom chips all have to mesh together - and two of those four are processors in their own right! During the board's development time, Flare have funded the work and kept themselves alive by taking on hardware projects from other businesses, notably Amstrad themselves. What with this work and considerable experience at Sinclair



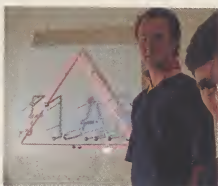
The Flare team : will their machine change the face of computer entertainment?

Research before setting up on their own, the trio are old hands at designing for mass production.

The problem now is to actually get the machine manufactured, and that's well beyond Flare's resources. While several companies have shown interest, the front-runner in the rumour stakes is Amstrad. While the boys from Brentwood could certainly fit the Flare One into their product line – probably by dropping the elderly Spectrum to make room – such rumours aren't always worth a great deal: a companion tale doing the rounds tells how Amstrad are suing Flare over the machine, a claim both sides strongly deny.

But will Amstrad want to market such an unconventional machine? As a modern micro, the Flare One's specifications look all wrong – and that's leaving the 8-bit architecture out of things for the moment. The Flare One can't comfortably manage an 80-col-

umn text screen, so word processing and other serious uses are just about out of the question. Its screen takes up a colossal 64K of memory: only the Archimedes and top-end PCs offer more for under £1000. It has no screen palette as such: to change one of the screen colours, you need to change all the pixels drawn in that colour.



The above points aren't problems at all, but they certainly show what an unusual approach Flare have taken. The idea behind the Flare One project was to produce not an all-round micro but an entertainment machine. The design discards many assumptions made by manufacturers in recent years, and in its philosophy almost marks a throwback to consoles. When (if) it reaches the shops, the entry-level Flare One will quite possibly load programs from tape, and may not even have a keyboard. This is not as crazy as it sounds: tapes are a very cheap storage medium, especially for

games, and with modern pointer-style operating systems a keyboard may simply be unnecessary. Besides, Flare have a price to aim for. They want to see the basic machine selling for under £200. ●

GOOD FOR GAMES?

If the Flare One does make it onto the market, one games house you can expect to see supporting it is Realtime. 'A byte-per-pixel screen is just what you want for 3D work' said Realtime's Ian Oliver. 'It makes things so easy. We took a look at the new VGA graphics boards for the IBM PC because that's got a byte-per-pixel mode, but it wasn't any use: you could only have one screen, and you need two for games programming. Otherwise there'd be a VGA version of Carrier Command.'

Zarch author David Braben is a fan of byte-per-pixel screen layouts – 'they're much easier to program for than bitplanes' – but the DSP's calculation speed also caught his attention. 'Three thousand vertices every vsynch (1 vsynch = 1/50th of a second) is quite impressive. You'd be very hard put to get that kind of performance out of an Archimedes – but then that's not really the bottleneck. The big tasks in solid 3D are scanning databases of shapes and putting polygons on screen.'

SPECIFICATIONS

MACHINE	TYPICAL RES	COLOURS (ON-SCREEN)	COLOURS TOTAL	PRICE
ATARI ST	320 x 200	16	512	£399
AMIGA	320 x 200	32	4096	£399
ARCHIMEDES	320 x 256	256	4096	£800
FLARE	256 x 256	256	256	£200?

SCREEN STORY

The extraordinary graphics power of the Flare One stems from a whole series of related design features, but central to the whole thing is the layout of the screen in memory.

The 128K of video RAM is split into two 64K screen areas. The normal arrangement has the video chip displaying one of these (the 'front screen') while the blitter updates the other ('the back screen'). Once the back screen has been updated the two are switched over and the updating process starts again, continually looping so long as animation is required.

The machine has two screen modes, either 256 x 256 pixels in up to 256 colours (low res) or 512 x 256 pixels in up to 16 colours (high res). In low res, each byte of screen memory gives the colour of one pixel. In high res things are a bit more complicated, with each half (or 'nybble') of a screen byte representing one pixel. The normal games mode would be low res, because its simple byte per pixel screen layout makes graphic manipulation very easy indeed.

In low res, the byte values represent the physical colours of pixels, not the palette colours. That is, you decide what colour a shape is going to be when you actually draw it. This isn't a statement of the obvious: most modern micros use palette colours, which you can change at any time. For example: on an Amiga you set colour A to be green, and draw a line in colour A. This simply gives you a green line. If you now set colour A to be red, the line you drew instantly turns red – as does anything else you've drawn in colour A.

The Flare One doesn't have a palette as such. If you draw a line in green, the only way to turn it red is to completely redraw it. In practice it's very easy to simulate palette changes using the blitter, but if you're used to the Amiga/ST way of doing things it'll strike you as odd that you should have to. Mind you,

if you're used to the Amiga/ST way of doing things you'll find the Flare One pretty odd right the way through.

BITPLANES, OR RATHER THE LACK OF THEM

The byte-per-pixel layout of the Flare's low-res screen is in total contrast to the bitplane system used by the ST and Amiga, and gives the machine a decisive edge over them.

A typical ST or Amiga game screen is made up of four separate 'bitplanes'. Each byte of a bitplane corresponds to a row of eight pixels on screen, giving a small amount of information about each of them. The video chip has to combine this information with similar data from bytes in the other three bitplanes to find out what colour each of those pixels actually is.

In other words, if you want to set the colour of one pixel you'll have to alter four different bytes of screen memory, one in each of the bitplanes. What's more you'll have to make the alterations carefully, so as not to disturb the extra information in each byte and so accidentally change the colour of neighbouring pixels in the same row of eight.

This careful alteration is a fiddly process rather like the old-fashioned 'travelling matte' technique used in movie special effects. In practice you've got to do three separate operations on each byte: you take the information already in the byte, combine it with a 'mask' byte to clear out the data you want to alter, combine the result of that with a 'detail' byte to fill the gap made by the mask, and then write the finished product back into memory.

Got all that? That's three read operations and one write operation for each byte, and you've got to alter four bytes in all. A decent games programmer can cut out the reads for the 'mask' and 'detail' bytes



The blitter moves a chunk of frame-grabbed image round the screen – but it's too fast to photograph!



Even without a palette in the conventional sense, colour changes like this are easy and quick thanks to the blitter.

easily enough, but it still takes eight memory accesses and another eight internal processor operations to change one pixel. The Flare One can do the whole thing with one single write operation, no reads and no internal messing around. No wonder it's so quick!

The bitplane layout handles a lot better when you're altering several adjacent pixels in one go, during software sprite operations for example, but the

BENCHMARKS

MACHINE	CLEAR	VECTOR LINE	FILL LINE	SPRITE
ATARI ST	160	2.3	50	22
AMIGA	128	4	40	57
ARCHIMEDES	560	32	260	86
FLARE	60	60	60	30

The four sets of performance figures, CLEAR, VECTOR LINE, FILL LINE and SPRITE are rough estimates of the four machines' raw screen-hitting power, measured in thousands of pixels per frame, (1 frame = 1/50th of a second) – so the higher the number, the beefier the machine. CLEAR is brute-force filling of a large area, an important ability for 3D games which need to clear a screen area before drawing shapes onto it. VECTOR LINE is line-drawing between arbitrary points as used in wire-frame graphics games. FILL LINE involves drawing horizontal lines of the kind used to fill a large polygon in a solid 3D game, working on a line length of about 80 pixels. SPRITE involves putting an arbitrary shape on screen, but without storing the background first. Some of the figures are based on manufacturer's estimates we haven't been able to verify. Also NB that Amiga and more particularly Archimedes figures could suffer badly from screen chip accesses. (Many Amiga games only use 16 colours at once, giving them a performance very similar to their ST equivalents.)

Any chip that can handle a 3000-vertex 3D world, rotated or translated 50 times a second, can reasonably claim to be powerful. Well, that's what Flare reckon the DSP (digital signal processor) chip in their micro can manage. So how come it's so fast?

It's not just a question of brute force: the DSP runs at 6MHz – that is, it can perform 6 million 'cycles' or individual operations per second – whereas the ST's 68000 runs at 8MHz. Despite this the DSP is far and away the faster of the two chips, thanks to advances made in chip design since the 68000's day.

The DSP is a reduced instruction set chip (RISC for short). This means that, like the Acorn ARM processor used in the Archimedes, it can only perform a small number of different instructions. Jobs that a complex chip like the 68000 can do with one instruction might take the DSP two or three – but those two or three still take less time than the 68000's one, usually much

Flare's no slouch at these either as the Benchmarks show. Bear in mind that a Flare One pixel can be any one of 256 colours as opposed to 16 for the ST or 32 for the Amiga (disregarding impractical modes), and it's performance looks like a remarkable testimonial for the byte-per-pixel way of doing things.

THAT BLITTER

The blitter's speed at conventional operations may be impressive, but that isn't all it can do. If the screen's set up properly, the handy little chip can also perform collision detection and depth-sorting tasks automatically.

This makes sprite-based 2D games very easy to write, and could also come in handy for displays with overlapping windows. These facilities work by storing depth or sprite/background indicators in each pixel's screen memory byte, and this necessarily cuts down the range of colours available. You'll still always have 64 colours available in low res however, so this is unlikely to cause games authors a problem.

Another technique that uses surplus colour information is mode-mixing. Many machines allow you to split the screen into areas of different modes, but Flare have really pushed things to the limit. You can set each byte of the Flare One's screen memory to be either one low-res or two high-res pixels, so that pinsharp areas on a multi-colour background (or vice versa) can be just about any shape you want. This is very useful for text messages, instrument panels and ultra-detailed sprites. What's more, you can use the high/low-res indicator as a depth indicator too, neatly protecting text boxes from graphics operations or whatever.

CUSTOM SILICON

The Flare One's custom chips are remarkable not only because they're so ambitious – made-to-measure RISC processors are rare things indeed – but because of the shoestring budget they were produced on. Until recently, prototype custom chips have been produced by photographic methods at an initial cost of around £20,000 per design. New techniques meant that Cambridge firm Qudos could knock them out at a tenth of the price by using an 'E-beam' – an electron gun, that is – to cut the pattern directly into the silicon.

Flare's creative use of custom silicon caught the attention of the Department of Trade and Industry, who've made a 16-minute film about the company. The DTI are trying to encourage more manufacturers to use custom silicon as a way of increasing efficiency, and are keen on the Flare One mostly because it's such a clear example, both financially and literally, of the technique's advantages.



It's official: the Flare graphic demo really is impressive!

NEXT BIG THING

If the Flare One isn't the success it's shaping up to be, it wouldn't be the first time a potentially earth-shattering micro fell by the wayside. The history of microcomputing is littered with machines that were well put together, great value for money or years ahead of their time but still never quite made it in – or even to – the marketplace.

Computer fans with longish memories may remember the Memotech MTX series, a set of sturdy Z80-based colour computers well liked by programmers but sadly unsupported on the games side of things. Belated attempts to give the machines Spectrum compatibility failed to save them from commercial failure and consignment to their owner's attics.

Another would-be blockbuster micro went through such unlikely names as Samurai, DPC (rumoured to stand for Damp-Proof Course) and Elan before eventually being launched under the name of its creators Enterprise. Generally known as the Flan, the machine had a

built-in joystick and almost no games software; terrific graphics and only a poor little Z80 to drive them; and a fantastically comprehensive Basic that ran at a snail's pace. The console design's pleasingly rounded edges made the Flan look like an artist's palette without a hole in it, or possibly a chocolate micro that had been left in the sun too long. There must be a warehouse full of the things somewhere.

Possibly the greatest of the failed contenders, the QL, came from Sinclair Research's very own Uncle Clive. Its central processor was the 68008, the runt of the 68000 litter, which put the QL at least a year ahead of its time (1984). While the press haggled over whether the 68008 was a 32-bit chip as Sinclair claimed, or in fact just an 8-bit chip with ideas above its station – history favours the latter point of view – pundits tended to ignore the machine's real problem, namely that the QL's microdrive system was wholly inadequate for serious use and too expensive for mass game-distribution. Needless to say, the QL got precious little games support despite being the most powerful home machine of its day. ●

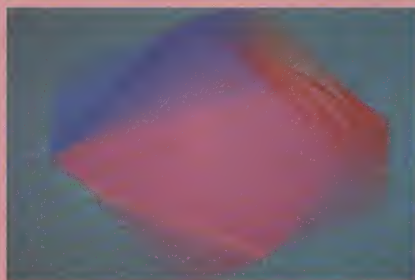
POWER CHIP



Even at its lowest spin rate, this cube's going too fast for the camera to catch. The speed is down to the blitter, but the geometrical calculations are all the DSP's work.

less. The typical 68000 instruction takes 4, 8 or 12 cycles while almost all DSP instructions execute in a single cycle.

Even where the DSP has to break its one-cycle one-instruction stride, there's very little loss of power. Multiplication is always a slow business as far as chips are concerned, and the DSP's mul-



A cube is easy – there are only 8 vertices to deal with – but Flare reckon the DSP can handle 3000 vertices at the same speed. Can your micro's sound chip do that?

tiply takes up a whacking 7 cycles (compared to a typical 50 or 60 cycles on a 68000) but that's nowhere near as bad as it sounds. The multiplication side of the DSP is completely separate from the rest of its innards, so your DSP program can carry on with other tasks until the result is ready. Clever stuff!

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Screen shots from Amiga version.

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WHO'S BAD!?

GAMES FOR PROGRAMMERS

We depend on the independent programmers of this country to come up with technically impressive, manically playable games – titles like *Virus*, *Lords of Midnight* – but who do they depend on? What sort of games will these software mavericks be loading up tonight after a hard day's work on their latest blockbusters? What do they look for in other people's games, and who do they rely on to deliver it?

GETTING ANALYTICAL

There are two reasons why a programmer might be interested in someone else's latest title. The first and most obvious is the same one anybody has for looking at a game – the sheer enjoyment of playing – but the second is peculiar to people who work with machine code for a living. It's **analysis**, the practice of judging a game by the technical skill that went into writing it.

Analysts are interested in the speed of scrolling, sprite movement or 3D shape manipulation. Their burning question is 'Could I have written that?'. Analysts love to reverse-engineer things: when they see a really original game technique, they'll sit down with pencil and paper till they've figured out how it works. They are hard people to impress. Games usually manage this tricky feat by doing something your micro isn't suited to – sideways scrolling on the ST or Spectrum, or solid 3D on a C64 perhaps – but the occasional biggie like *Knight Lore* or *Carrier Command* will knock everyone's socks off by the sheer scale of its ambition.

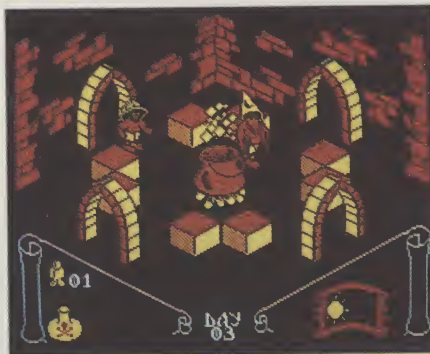
If a surprisingly large number of programmers are analysts, there are some good reasons for this. There's probably an element of competition in there somewhere – programmers working alone can only judge their own skill at the job by looking at other people's latest games – and also a natural professional curiosity, but there's another side to it as well. Most programmers are either reluctant to spend their spare time playing computer games, or simply don't have any spare time in the first place. If you only look at a game for five or ten minutes you won't see much of its gameplay – unless it's very simple fare indeed, that is – but you'll get a good idea of the technical skill involved in writing it. In other words, analysis may well be all that a lot of programmers have time for.

JON RITMAN

Since his games debut with the improbably named *Namtar Raiders*, Jon has written some pretty hot stuff: he programmed *Matchday*, *Batman*, *Head over Heels* and *Matchday II* for Ocean. Jon's currently working on a hush-hush coin-op game for RARE, the arcade and Nintendo cartridge company run by Ultimate founders Tim and Chris Stamper. The game will run on RARE's own dedicated coin-op hardware – 'The actual board uses a jazzed up Z80: it's a Hitachi model which has built-in multiply instructions and stuff.' – but Jon plans to convert it down to the home micros if at all possible.

'I don't really play a lot of games. I don't like violent shoot-em-ups, and they seem to account for 90% of the stuff released these days. I read most of the magazines pretty thoroughly for the reviews, but I won't buy things unless they look original. My games collection runs to 20 titles or so, but most of them are pretty old.'

'*The Sentinel* (Geoff Crammond) was a lovely idea, but I didn't like the way it was so easy



Knight Lore by Ultimate, a game admired by almost everyone we spoke to. 'When I saw that I just thought "How the hell are they doing that?" ...' (Chris Hinsley)

to get disorientated. I prefer something really straightforward like *Boulderdash*, say.' I've played all of Realtime's stuff apart from *Carrier Command* – it sounds great but I haven't got an ST, so I've not seen it yet. I think Realtime are very, very competent people.'

The graphic techniques for generating the landscape in *Lords of Midnight* (Mike Singleton), those were very clever indeed. I never really got to grips with the game itself though. It's strategy really, and that kind of thing takes a lot of time to get into. I prefer games which keep things relatively simple: I want it to be obvious what you've got to do.' I first saw *Knight Lore* (Ultimate) the day I handed the finished *Matchday* over, and I just went 'Wow! I really want to write games like that.' I went away with my head full of ideas for *Knight Lore* style games.'



DAVID BRABEN

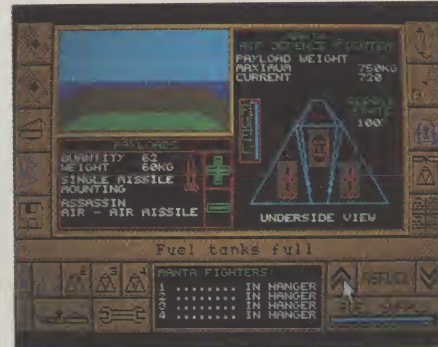
Author (with Ian Bell) of the monstrously successful *Elite*, David's more recent claim to fame was the stunning Archimedes game *Zarch* and its ST incarnation *Virus* (see Screen Test for review).

He's currently working on Amiga *Virus*, but once that's out of the way it'll be back to the mammoth task of writing an *Elite* sequel: don't expect to see that one this year!

'I try not to play computer games too much. I'm in front of a computer screen programming all day, so in my spare time I like to get away from it, do things out of doors or whatever. It's not that I don't enjoy games, and it's certainly not that being a programmer spoils them for me: it can be very interesting seeing whether people have done things properly or not. Like *Carrier Command* for instance: that does look very good. Unfortunately it also looks like you'd need to play it a lot to do it justice – and as I say, that's something I try not to do.'

STEVE BAK

Steve has firmly established himself in the ST and Amiga world with games like *Goldrunner*, *Karate Kid II* and *Return to Genesis*. He's now converting his latest hit, *Leatherneck*, to



Carrier Command, by Realtime – everyone's seen it (except Jon Ritman!) but no-one's had chance to play it properly. 'I've only had time for a quick fly round...' (Mike Singleton)

run on EML's ST-based coin-op system, before he starts on the ST conversion of Logotron's forthcoming Amiga title *Star Ray*. Future projects include an Amiga arcade adventure for Microdeal based on the cult horror/comedy video *Fright Night*.

'I play mainly arcade games: I've never really seen a home computer game to measure up to the arcades. I really got into the coin-op of *Gryzor* a while back, and actually had a machine at home. Once I managed to completely finish it without losing a life! The Ocean versions were very disappointing in comparison, but then what can you expect? The hardware just isn't in the same league.'

'Of those home games that I have enjoyed, I'd say that *Boulderdash* was my favourite. *The Sentinel* was very good too: I was playtesting the Amiga version recently, but I ended up playing it far more than I needed too, and got to somewhere around screen 7000. When I play a home game, it's just the gameplay that I'm interested in. I couldn't care less about the technical skill that went into it so long as the gameplay's right. I still play *Zolyx* on the C64 and that's technically awful, but the game itself is good.'

'When I wrote *Goldrunner*, *Karate Kid II* and *Return to Genesis*, I did them all as challenges really. People said that it couldn't be done – the fast scrolling in *Goldrunner*, the large sprites in *KK II* or the horizontal scrolling in *Return to Genesis* – so I set out to prove them wrong. I think gameplay is more important though, and I'm concentrating on that from now on. *Leatherneck* was a simple vertical scroller and I finished the technical side of it about six weeks after the PCW show last year, but it's only just been released. I needed the time in between to get the game maps and difficulty tuning the way I wanted them.'



STEVE TURNER

Steve's notched up a fair old number of software hits over the years – *Magnetron* and *Ranarama* are two of the more recent goodies we owe to his fine sense of gameplay – and he's not resting on his laurels either. Right now he's busy converting Andrew Braybrook's unreleased



The Sentinel, by Geoff Crammond. Steve Bak did this Amiga conversion and got hooked while he was playtesting it, Jon Ritman found it disorientating, and Mike Singleton? He loved it! 'It was a beautiful piece of inspiration...I actually went out and bought a copy'

C64 title *Intensity* to the Spectrum, both versions being due out some time in the Autumn.

I don't often find the time to play games – not lately at any rate – but I do enjoy them. I usually go for good old-fashioned smash-em-ups. I like the feeling of power you get from them, especially progressive shoot-em-ups like *Side Arms* or that sort of thing. In the arcades my favourite's probably still *Star Wars*: I love the impression of speed you get in that.'

I don't really think about the technical side of games I'm playing. If there are sluggish joystick responses or something like that, then I'll notice it: otherwise, I won't. Good programming doesn't normally stand out.'

I like games I can get into quickly. For one thing, they're usually all I have time for. I don't normally go by author – one game can be so different from another – but I do look forward to seeing Raff Cecco's stuff.



RAFF CECCO

Raff first made a name for himself with the Mikrogen title *Equinox*, but he's better known for Hewson games like *Exolon* and *Cybernoid*. A dedicated Z80 fan, he's currently working on a Spectrum scroller called *Storm Lord*. It's early days yet, but Hewson hope to have this on the streets in time for Xmas.

I don't really enjoy home games that much: I'd sooner go into the arcades and play something like *Operation Wolf* or *R-Type*. What impresses me on a micro game is technical achievement. Like the sideways scrolling on the Spectrum version of *Zynaps* (Dominic Robson): that was technically excellent. Getting scrolling like that without hardware support is very difficult indeed.'

CHRIS HINSLEY

Chris has been writing games since the dawn of the industry – his first title was a *Centipede* clone for the ZX81 – and has a list of programming credits as long as your arm. He's best known on the 8-bit machines for arcade adventures like *Everyone's a Wally* and *Pyja-*

marama, but now he's turned his attention to the ST and Amiga. His work here includes ST *Xevious*, Advanced Art Studio and the soon-to-be-released *Verminator*. Chris is currently working on *Cronos*, a scrolling game for the ST and Amiga which will probably be published by Hewson later this year.

I don't normally buy home games, because I can't really find any lasting interest in them. After ten minutes of play I start picking holes in a game, finding fault with it technically. I was quite impressed by the scrolling in *Golddrunker* (Steve Bak) when it came out – it didn't have much to it as a game though, just flying around and blasting – but nothing's really amazed me since *Knight Lore*. When I saw that I just thought 'How the hell are they doing that?', and that's the only game that ever did that.'

'By and large, I'd rather go and play in the arcades. The hardware's just so much better there. Take something like *R-Type*: it was just a straightforward scrolling game really, but boy did it have some addictive qualities.'



JOHN PHILLIPS

John's Hewson debut, *Impossaball*, brought a brand new perspective to bouncing ball games and proved to be tremendously compulsive. He followed this up with the ACE-rated *Nebulus* which combined well-judged gameplay with remarkable inventiveness and technical skill. He's now almost finished the ST version of *Road Star*, a driving and shooting game for Hewson which is due out in the Autumn.

I like Paul Woakes' stuff a lot – *Mercenary*, *Backlash* and so on – and a few of the old Ultimate games as well. When I have a go on someone else's game I don't look at it technically: I just play it.'

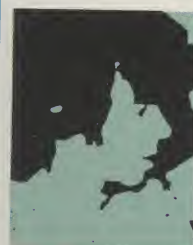
I do like games to be complete within themselves, but a lot of the stuff you see these days seems to have something missing. Paul Woakes' stuff isn't like that: even where his games are fairly abstract, they still fit together well.'

REALTIME

Realtime produced 3D *Starstrike*, 3D *Starstrike II* and the 8-bit conversions of *Star-glider*, before bursting into 16-bit prominence with the oh-so-impressive *Carrier Command*. They're now finishing off 8-bit, PC and Amiga versions of *CC*. Their next project for Telecomsoft will again use solid 3D – a field that Realtime pioneered and BT are swiftly monopolis-

ing – but the game will only be produced in 16-bit versions, and the emphasis will be on faster movement as opposed to *Carrier's* complex gameplay.

'In the arcades I used to play *Battlezone* a lot, and I quite liked *Zaxxon* too. As for home games I like Jon Ritman's stuff, and I really got into *Hitchhiker's Guide to the Galaxy* (Steve Meretzky and Douglas Adams) too – though I never could get past the screening door! I think people get the impression that because we produce all this fast 3D stuff, we're a bit snobbish about other people's games – but that's not so. We like lots of other programmers' stuff: it doesn't matter what sort of game it is, so long as they tried hard. The thing *everyone's* been playing round here recently is *Dungeon Master* (Andy Jaus, Doug Bell & Mike Newton) – we really have put in some time on that one.'



MIKE SINGLETON

Mike rocked the games world with his land-scaped blockbuster *Lords of Midnight* and its sequel *Doomdark's Revenge*, since which he's also brought us *Dark Sceptre* and *Throne of Fire*. He and his Maelstrom team are currently wrapping up the solid 3D shoot-em-up *Whirligig*, to be followed by various projects as yet still under wraps.

To be quite honest, I don't play many computer games. I think this is endemic among programmers. Partly it's spending all day working in front of a screen and not wanting to do that after hours too – I don't even watch much telly, never mind playing games – but mostly it's just a sheer lack of time.'

There are some games that have impressed me: *The Sentinel* in particular. I actually went out and bought a copy of the game, and that is rare. It wasn't the graphics that really struck me – though they were excellent – but rather the way the gameplay was engineered to fit in with them. It was a beautiful piece of inspiration, and turned the limitations of its graphics system into virtues – which is the mark of a really good game. Recently, *Carrier Command* has impressed me too, though I've only had the time for a quick fly round so far.'

THE WINNER

So who comes out on top? Among the oldies Ultimate's *Knight Lore* still reigns supreme, with Geoff Crammond's *Sentinel* and Chris Gray's *Boulderdash* also having strong followings. The current favourite on the other hand must be Realtime's *Carrier Command* – though hardly anyone we spoke to had actually found the time to play it properly!

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Screen shot ST



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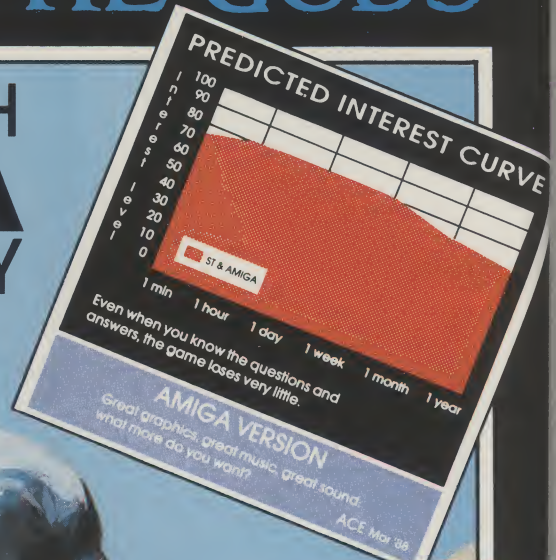
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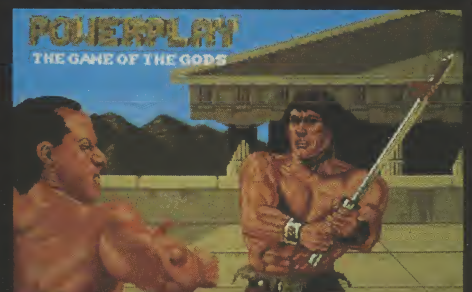
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Screen shots represent the Amiga version only. Others may vary.
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SCREEN TEST

Everyone is catching the fever this month, because *Virus* is spreading like wildfire. You saw it first in the pages of ACE and now the whole software industry is buzzing with excitement about David Braben's blockbusting game. So prepare yourself for the definitive review, from the people who you can trust.

8-bit owners will have just as much fun with *Dark Side*, the sequel to *Driller*, that uses the Freescape programming system. It too is 900 rated – a superb double for programmers Incentive.

Also bursting out of the pages are an exclusive review of Mike Singleton's latest game *Whirligig*, the computer game based on *Mickey Mouse* and a hot update on the Amiga version of *Sentinel*.



THE RATINGS

HOW they're calculated...

If you buy a game, how much enjoyment will you get out of it, and for how long? Just check out our revolutionary PIC (Predicted Interest Curve) for the full story. Brilliant arcade games start high on the curve, and then steadily tail off as you lose interest; powerful puzzle games may ride the crest of the curve for months – but the moment you solve them they'll come tumbling down; complex strategy games may stump you at first – but climb up the scale as you begin to appreciate the scope of the gameplay. And as for the turkeys – they start low, stay low, and have nowhere to go but down, down, down.

Once you've seen how long the game can hold your attention, all you need to glance at is the renowned ACE RATING. This is calculated according to the area under the PIC. The bigger it is, the better the game. Add to that our definitive ratings for IQ Factor (will it give your brain cells a work-out?) and Fun Factor – a measure of instant appeal and exhilaration as you dive into the game. And, of course, we rate the Graphics and Audio effects too...for EVERY machine the game's available on.

WHY you can rely on them...

The ACE reviewing team covers a broad spectrum of computer entertainment talent. Andy Wilton – ACE's resident technical wizz – is as handy with a smart bomb as he is with hexadecimal. Andy Smith wouldn't know hexadecimal from a hole in the ground, but can wipe the floor with any number of aliens. Bob Wade (ex-Personal Computer Games, Zzap!64 and Amstrad Action) has played more computer games than any sane person ought to. Add Steve Cooke (ex-PCG and formerly columnist for magazines ranging from Zzap!64 to Your Sinclair) and Pete Connor (ex-Amstrad Action, PCG, and Your Computer reviewer) and you've got age and experience as well as youthful enthusiasm.

Every game on the following pages has been seen by all of us. We compare notes, express differing opinions, and only then do we decide who's to take final responsibility for getting our views into print. What follows, then, isn't just a collection of casual comments, but the definitive ACE verdict on this month's software. We've checked it out – now you can too.

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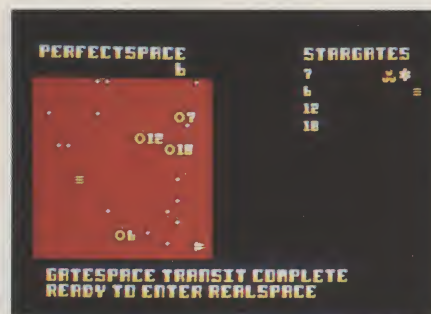
- 67 CHARLIE CHAPLIN *US Gold*



The map screen - sector 4225's not far away and it's got a fuel and ammo dump. It could also be crawling with aliens...



It is. Scimitar class fighters this time, and with no chaff bombs left it looks like your goose is cooked.



The first Perfect space sector. Notice how it loops back onto itself. If you're into maths, you'll love working out the Stargate sequences.

WHIRLIGIG

FIREBIRD set things spinning

SOME people don't know the meaning of the word moderation. Mike Singleton and the rest of the Maelstrom programming team certainly don't. Their latest offering has some 4 BILLION locations (sectors), that's 4,000,000,000! Each of these sectors is different and collectively they're known as Eigen space. Five of the sectors are known as Perfect space, and it's these five sectors that the game revolves around.

The game opens with a map display of sector zero. Icons in the map represent various objects, including fuel, chaff and missile dumps. Also displayed is an icon representing Stargate 1. The Stargates are the doorways to the other sectors and the numbers tell you exactly which sector they lead to. Small blue dots on the map repre-

sent possible positions of hostile aliens. Next to the map is a list of the Stargates in that sector and icons representing fuel etc that can be found in those particular sectors.

So, sector zero awaits. Press the left mouse button at the prompt and you're transported to the sector. The game view changes completely now. You're looking at your ship in the centre of the screen. To call it solid 3D, or filled 3D would be an injustice, Lightsource 3D is the term you need to describe how all the objects are drawn and shaded, the lightsource being fixed so

your ship (and all the other objects) moves in and out of shadow as it twists and turns while you attempt to guide it around the wrap-around sector with the mouse.

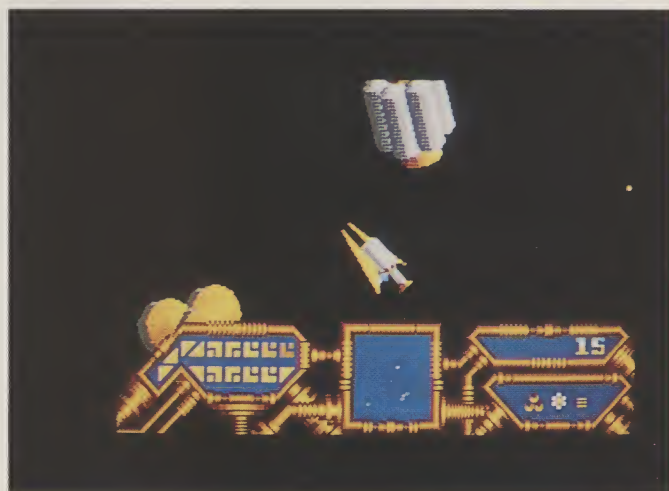
You will have already decided how your

going to tackle the sector before you actually get there, i.e. whether you're going to re-arm or re-fuel (or both) before you head through a Stargate. It's worth remembering that the links between the Stargates and sectors are mathematically based (e.g. prime number sectors always have a Stargate that will lead back to sector 1).

Once you're in a sector it's time to set about finding your target. A pop-up control panel contains a radar which you can use to guide your ship around the sector. Using this control panel is fine when things are quiet, but once you start coming under fire from either a fixed position enemy installation or a roaming enemy fighter, then it restricts your view and makes your immediate task of surviving slightly more difficult. The control panel's your only way of checking fuel and ammo levels so you have to refer to it occasionally. One thing it doesn't show on your



In a sector containing fuel and ammo dumps. It's a shame we can't show you the superb animation.



Here's a view from approximately the same position but this time you've got your control panel on show. Notice how it obscures your view.

RELEASE BOX

ATARI ST	£19.95dk	OUT NOW
AMIGA	£19.95dk	IMMINENT
SPEC	£7.95cs, £12.95dk	IMMINENT
AMS	£8.95cs, £14.95dk	IMMINENT
C64/128	£9.95cs, £12.95dk	IMMINENT

ATARI ST VERSION

The graphics really are top notch, being both smooth and colourful. The music's good but you can turn it off if you wish. The mouse control used to move your ship around is tough to get to grips with but gets easier as you persevere. All in all, *Whirligig's* a terrific game, it's got plenty of action but it'll get you thinking too as you try to plan the safest route to the high numbered sectors. With *Whirligig* you can dive straight into the action, but it's very much harder to stop playing the thing.

GRAPHICS 9 IQ FACTOR 5
AUDIO 8 FUN FACTOR 8

ACE RATING 868

control panel radar is the positions of the enemies – roaming or fixed. The fixed installations aren't too much trouble to deal with once you've found them, just loose off one of your heat-seeking missiles and watch the explosions. If the enemy get a shot in first though, you'd better be ready to hit the right mouse button to counter the attack by releasing a chaff bomb. A word of warning is needed here, your missiles are heat-seeking. Loose of a missile with no enemy in range and your missile's liable to home in on your own exhaust!

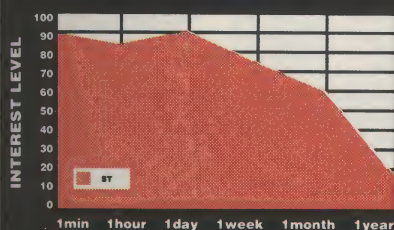
Dealing with the roaming enemies including Scimitar class fighters, Nightshade class fighters and Archer class fighters is not so easy. These fighters vary in viciousness and can be tough to destroy – especially in the high number sectors when you can be fighting more than one ship at once.

If the idea of finding five separate sectors among 4 billion seems like too big a task, don't worry. You're told which sectors are the Perfect space ones, all you have to do is get there in one piece. And working your way through the sectors doesn't take you half as long as you might imagine.

Whirligig's an impressive game and once the novelty of the stunning graphics has worn off, it's not long before you realise just how playable it is too.

● Andy Smith

PREDICTED INTEREST CURVE



Just misses the ACE Rated category, but it's still marvelous stuff.



Dogfighting your way through the sector. That's a Nightshade class fighter on your tail...

They're tough to shake off... and that missile might not be enough to take it out...



It wasn't and he's hanging on to your tail. But if you can make it through the Stargate you'll be safe.

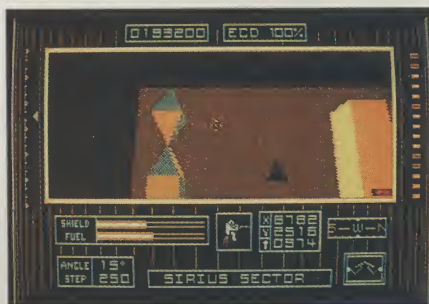


Phew! Made it. Everything in the sector gets sucked through the Stargate before the screen switches to the map screen.





1 You enter the sirius sector.



2 Turning on the jet-pack you get a close-up of the tower top.



3 Flying forward gets you a better view of the plexor gun on the ground. What can that triangle be for?

DARK SIDE

INCENTIVE scheming in 3D

ULTIMATE were the last software house to come up with a programming technique that took the games world by storm. Now Incentive are causing a similar ruckus with their *Freescape* system. It first made its appearance in *Driller*, and is



This is the prison cell you get thrown into. Lo and behold, inside you find a telepod crystal - but how are you going to get out again?

now used for the sequel - which looks set to be an even more popular success.

The game is set 200 years after *Driller* and continues the battle between the Ketars and the Evaths. Your task is to destroy an energy grid which is powering up Zephyr One - a doomsday device aimed at your planet.

If you've seen *Driller* then you'll immediately recognise the stylish and distinctive *Freescape* system. It creates a 3-dimensional world which you can walk and fly into, over and under. Your freedom is considerably enhanced by being able to fly right from the start with the aid of a jet-pack. However, there isn't much fuel - so no joy-riding.

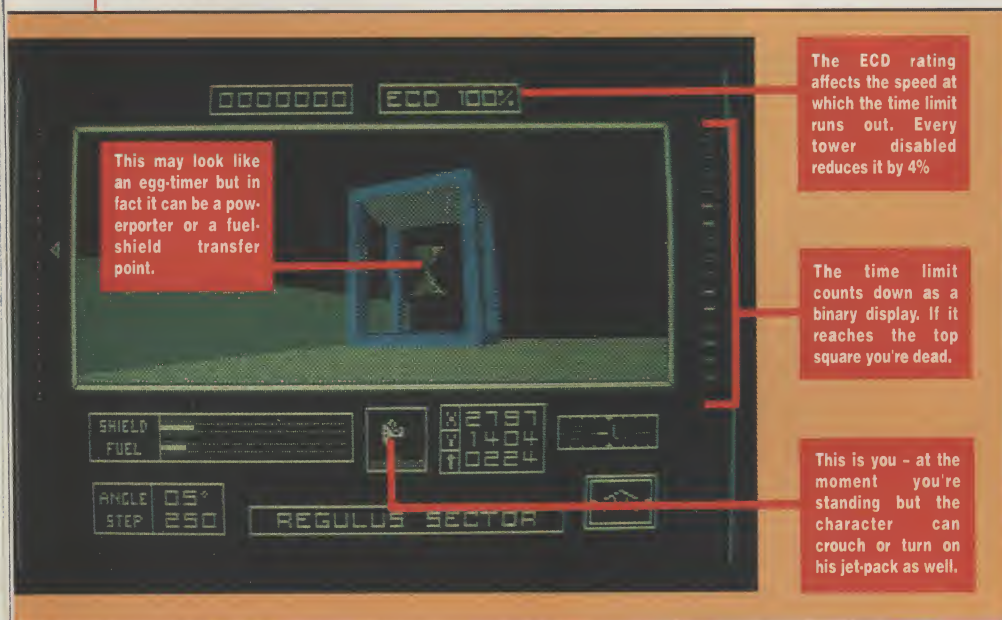
The view you're given is very versatile. You can look through a 180 degree arc up

and down, and also tilt the view. The movement capability is greatly enhanced by the jet-pack - which can go straight up and down - and the ability to crouch and crawl under things.

Interaction with the stippled landscape is conducted in one of two ways: either you can shoot things with your laser or walk into them. The latter can be a little dangerous because every time you walk into something you shouldn't it depletes your initially small shield supply. Both shield and fuel levels can be increased by walking into the right object.

Once you're familiar with the environment and your equipment, you can get down to the task in hand. It's more of an arcade game than *Driller*, although the puzzle emphasis is still strong. Destroying the

915
ACE RATED



This may look like an egg-timer but in fact it can be a powerporter or a fuel-shield transfer point.

The ECD rating affects the speed at which the time limit runs out. Every tower disabled reduces it by 4%.

The time limit counts down as a binary display. If it reaches the top square you're dead.

This is you - at the moment you're standing but the character can crouch or turn on his jet-pack as well.

RELEASE BOX

AMS	£9.95cs, £14.95dk	OUT NOW
SPEC	£9.95cs, £14.95dk	OUT NOW
C64/128	£9.95cs, £14.95dk	IMMINENT
ST and Amiga versions under development		



This is the interior of the telepod and there's one crystal in place. Shoot it and the pod will move to a new location.



4 As you turn to the right a building comes into view. Let's investigate.



5 Approaching the building reveals a block - wonder what happens when you shoot it?



6 Back on the ground you shoot the block and a door appears. You venture inside...

energy grid is mostly a matter of exploration and mapping, with more and more puzzles introduced as you get deeper into the game.

The energy grid is a chain of towers linked by cables that run along the ground. The tower tops have to be shot to disable them. However, if two other working towers are linked to it the damaged tower will regenerate immediately. This is the crux of the game - finding the start of a chain of towers and wiping them all out. This isn't made easier by the fact that some towers are initially connected to up to five others.

It's easy to find a few towers early on that aren't in complicated, criss-crossing chains. This is important because the time limit depends on the number of towers operating. The more towers, the faster time runs out.

Naturally things aren't as easy as that because there are plenty of defences and puzzles to test your skills. The simplest are guns called Plexors which shoot when you get too near. They don't all behave the same though - watch out for reappearing ones and devious ways of getting rid of them.

The puzzles mostly consist of working out ways to get inside buildings, and how to switch devices on and off. Rapid travel can be achieved using powerporters which teleport you from one spot to another. The telepod also teleports you, but to use it you have to find four crystals. Each crystal will take the telepod to a different place, and all four are needed to bring about a final victory. The first is easy to find - you'll encounter it by



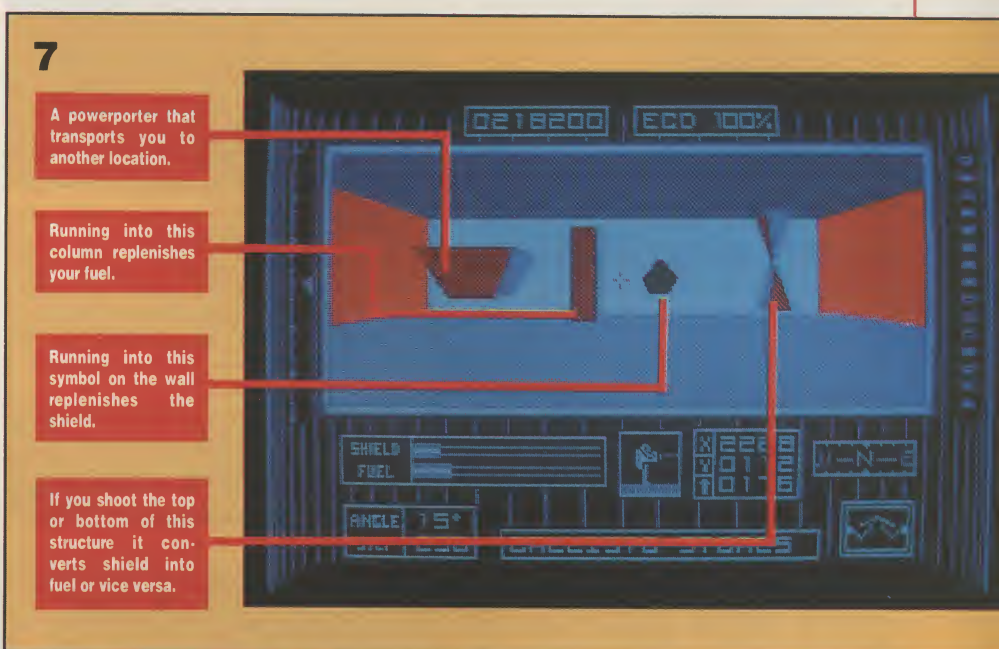
SPECTRUM - equally superb graphics on this version.

SPECTRUM VERSION

It's faster than the Amstrad version but less colourful. The stippling and shading effects mean it still looks fine.

GRAPHICS 8 **IQ FACTOR** 7
AUDIO 2 **FUN FACTOR** 6

ACE RATING 904



A powerporter that transports you to another location.

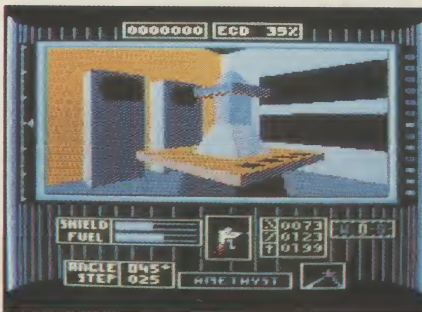
Running into this column replenishes your fuel.

Running into this symbol on the wall replenishes the shield.

If you shoot the top or bottom of this structure it converts shield into fuel or vice versa.

accident - but the other three are altogether much harder to get.

As in *Driller*, you have to watch out for the unexpected around every corner. There's a tunnel network which can get you into otherwise hard to get at locations. It's also used when getting out of the prison cell that the automatic defences can toss you into. You've



C64 - not quite finished yet, but we'll update it when it is.

AMSTRAD VERSION

The graphics are of the same high standard as before, excellent use being made of stippling, shading and colour. Movement isn't lightning fast, but with the variable step size it moves at a reasonable pace. The sound is poor but that's hardly a surprise with so much graphics and gameplay packed in.

GRAPHICS 9 **IQ FACTOR** 7
AUDIO 3 **FUN FACTOR** 6

ACE RATING 915

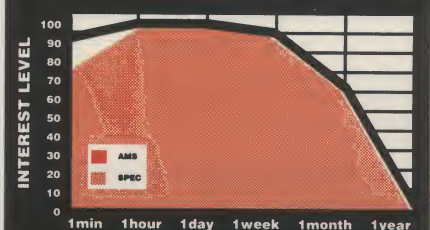
also got to watch out for fatal drops when the jet-pack isn't on, and the killer satellites that appear above you and start blasting away at your shield.

There's a lot more urgency about the action than in the more sedate *Driller*. The time limit is a tough one and you've got to move fast early on if you're going to beat it. Having said that, it is easy to get into because although the first few games will end quickly, you'll still be finding out lots of interesting things in that time.

It's more absorbing than *Driller*, but probably easier to solve as well. You'll be completely enthralled by it until it's solved but after that there's nothing to come back for. At the reduced price this is even better value than the original. It looks like *Freescape* is going to be around for a lot more games.

● Bob Wade

PREDICTED INTEREST CURVE



You'll be totally absorbed until you finish it, but after that it has nothing more to offer.

SKATE CRAZY

GREMLIN get their skates on

STREET cred raises its spiky-haired head once more. Forget BMX and skateboarding – rollerskates are back.

The game is split into two sections: a car park challenge and a championship course. In the car park you must travel round a course of gates, jumps and obstacles, performing stunts on the way. The championship is a right-to-left scrolling course where you have to jump over and duck under obstacles, trying to reach the end.

In the car park four judges mark you on speed, complexity and variety of moves – jumps, knocking tin cans over, collecting bonuses and skating backwards. You have

to complete the course as fast as possible, still doing lots of tricks on the way. Crashes, skidding and repeating stunts too often can actually lose you points.

On the scrolling championship course you have to skate along (by waggling on

RELEASE BOX

C64/128	£9.99cs, £14.99dk	OUT NOW
SPEC	£7.99cs, £12.99dk	OUT NOW
AMS	£9.99cs, £14.99dk	IMMINENT

C64 VERSION

An extremely difficult and frustrating version, particularly in the car park, where getting a qualifying score is high impossible, except by means of a bonus section where you collect litter. The controls for this and the championship are very awkward too. The graphics and sound are average, but the gameplay difficulty has been set too high.

GRAPHICS	6	IQ FACTOR	2
AUDIO	3	FUN FACTOR	7
ACE RATING 600			

SPECTRUM VERSION

More friendly but still tough. There's no annoying waggling on the championship course, and the manoeuvres are easier in the car park. The graphics and sound are sparse in both stages. However, there's some nice animation for the skating and jumping.

GRAPHICS	6	IQ FACTOR	2
AUDIO	3	FUN FACTOR	7
ACE RATING 600			



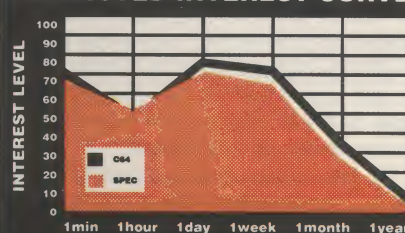
C64 – you're the cool dude with shades, peaked cap and eight wheels on his feet.

the 64) jumping or ducking under obstacles. Along the way you can collect objects that are worth bonus points. Four different courses contain many hazards to knock you down, and some will cause you to instantly lose a life if you don't negotiate them correctly.

You'll really need to practice to get anywhere in the car park section. The championship courses are easier, but still very difficult to complete. It's addictive in its own way, but annoying too because it's so tough.

● Bob Wade

PREDICTED INTEREST CURVE



Practice is needed to overcome the frustratingly difficult elements, but these make the 64 version a challenge for longer.

ALIEN SYNDROME

ACE's mutant hordes

SWARMS of (what appear to be) green and purple maggots are the first thing to greet you in this arcade conversion from ACE (the Softek label, not the magazine). And you're going to be seeing a lot of those in this one or two-player blast as you try to rescue your trapped buddies and escape from the complex you're in.

As if those hordes of hideous mutants weren't enough, you're up against a vicious time limit too. The exit from the level won't open until you've got enough rescued buddies under your belt, and if you don't get there in time...bang! – it's game over.

At first, though, the time limit is going to be the least of your problems as those mutant creatures are horribly numerous, horribly fatal and just...horrible. Fortunately for you, there are various extra weapons to pick up from bays dotted around the complex – and you'll need 'em.

Successfully escape from the complex and you then have to do battle with a very unpleasant end-of-level monster, before setting off all over again in a new, tougher complex.

If the gameplay sounds ever so slightly



ST – You won't have to mind the odd unavoidable death – this is how close to the edge of the screen you have to get to make it scroll, and there are sure to be some more nasty creatures like those behind you waiting...

shallow by now, then don't set your heart on state-of-the-art graphics, either. The scrolling is stiff and jerky, and you have to get far too close to the edge of the screen to make it move. Basically, *Alien Syndrome* is difficult right from the start, and doesn't offer enough interest to make you persevere.

● Rod Lawton

ATARI ST VERSION

Attractive graphics, superficially, but the horizontal scrolling is jerky and crude. The gameplay is tough without having any real depth, while the soundtrack is dreary and monotonous and adds nothing to the game.

GRAPHICS	7	IQ FACTOR	2
AUDIO	2	FUN FACTOR	6
ACE RATING 511			

C64 VERSION

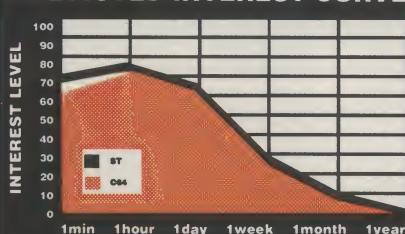
Seems slightly easier and thus more playable than the ST version, but that scrolling's even more annoying. You can actually outpace the scrolling on the C64. The pleasant, jaunty soundtrack's a whole lot better than on the ST though.

GRAPHICS	7	IQ FACTOR	2
AUDIO	6	FUN FACTOR	6
ACE RATING 499			

RELEASE BOX

C64/128	£9.99cs, £11.99dk	OUT NOW
ATARI ST	£19.99dk	OUT NOW
SPEC	£8.99cs, £14.99dk	IMMINENT
AMS	£9.99cs, £14.99dk	IMMINENT
AMIGA	£19.99dk	IMMINENT

PREDICTED INTEREST CURVE



If it was as rewarding as it is difficult, there wouldn't be a problem.

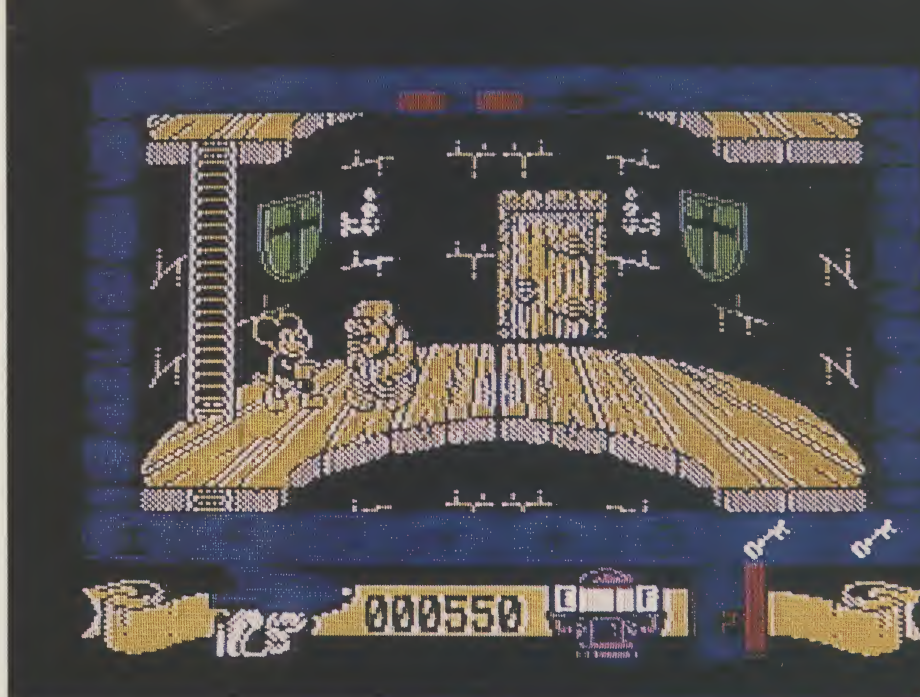
HEY Pluto, licences don't come much bigger than Mickey Mouse. He's about to celebrate his 60th birthday, and far from thinking about his pension, he's getting even more active in his old age.

True to his squeaky-clean image Mickey is playing the good guy, trying to save Disney castle from the ogre king who has taken up residence. To evict the evil wretch he has to complete a lot of sub-games and beat off the hordes of nasties sent to stop him. All this while armed only with a water pistol and hammer – what a mouse.

The towers in which the game takes place are circular. You have a cutaway view through one side, revealing wooden floors connected by ladders. On the far wall are doors leading to the various sub-games, and from which the nasties come scuttling out.

The bad guys come in two sizes – little and large – and lots of different shapes. The little monsters are more plentiful and are no match for a medium sized mouse. Some types can be dispatched with the water pistol, others with the hammer. The big monsters split into two little ones when hit with the hammer, so you'll have to go after them as well.

When the monsters are zapped they leave behind an object. These are generally useful, but are sometimes bad for you. Mostly you'll be left water bottles to refill your supply which is drained by the monsters. The other spells that appear will, for a short time anyway, slow the monsters down, speed Mickey up, give you a shield, allow



Spec – Mickey encounters a nasty ogre. Bash him with the hammer and he will turn into two little ogres.

MICKEY MOUSE

GREMLIN come to Disney's rescue

you to walk on thin air, freeze the monsters, and repel them. There's also a black ball which will stun you in the same way as falling through holes in the floor does.

Before being able to enter a room you'll need to pick up keys left behind by zapped monsters. Inside each room is one of four sub-games. The sub-game has to be successfully completed in order to block up the doorway. Once all the doorways are blocked you can exit to the next tower.

Initially you'll encounter the maze room. Here you have to make your way round a

upwards, eroding the balcony beneath your feet. You have to throw hammers down to burst the bubbles and also hammer the ghosts who float along the balcony with you.

The other two rooms are a bit wet, because in one you've got to stop a pipe dripping and in the other you've got to turn off taps. To stop the pipe leaking you have to hammer corks into it, while avoiding the monsters, and hit the ogre at the top of the screen when his barrier goes down. The tap room has moving platforms which you have to leap around trying to turn four taps off. Once again the ghosts are doing their best to foil your efforts.

The towers get higher and harder as you progress, but initially it's easy to complete a few rooms. It's got a simple addictiveness which will appeal to most players. For those of you who have grown out of watching big-eared, clog-footed, red-shorted mice there's still plenty of action to cope with. The sub-games lack enough variety to make it interesting for long, but it's enjoyable while it lasts.

● Bob Wade

RELEASE BOX			
SPEC	£7.99cs, £12.99dk	OUT NOW	
C64/128	£9.99cs, £14.99dk	IMMINENT	
ATARI ST	£19.99dk	IMMINENT	
AMS	£9.99cs, £14.99dk	IMMINENT	

C64 PREVIEW

Great big colourful, cuddly sprites are much in evidence, although the towers aren't as detailed. From the preview version, the gameplay is very similar, but obviously neither the graphics nor gameplay is finalised.

ATARI ST PREVIEW

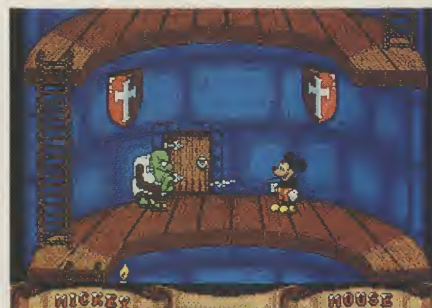
The graphics look superb on this preview version. The animation is excellent and humorous too. Gameplay again seems very similar to the Spectrum, but watch Updates for a definitive view.

SPECTRUM VERSION

The sprites are big, bold and delightfully animated. Mickey himself has been nicely reproduced. The towers look stylish, but the sub-games don't look half as pretty. The introductory music is excellent and sound effects during the game are minimal but adequate.

GRAPHICS 8 **IQ FACTOR** 3
AUDIO 6 **FUN FACTOR** 8

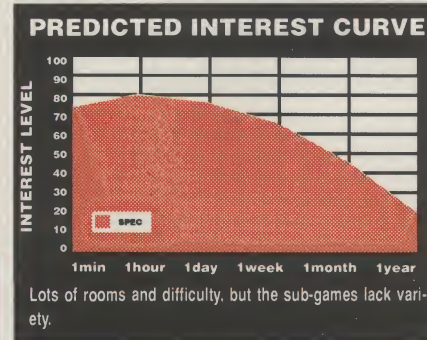
ACE RATING 743



ST – never has a mouse looked so good. Lovely animation and humorous touches too.

series of flick screens trying to collect a hammer, nails and wood. A black ball tries to stop you – you have three lives in each sub-game. There are also hearts for bonus lives, springs to give you reflective shots, a capsule which gives you immunity and skulls which lose you a life. As you complete more of these rooms the number of balls that appears on each screen increases.

The inverted space invaders room puts Mickey on a revolving balcony. Below him bubbles emerge from nozzles and float



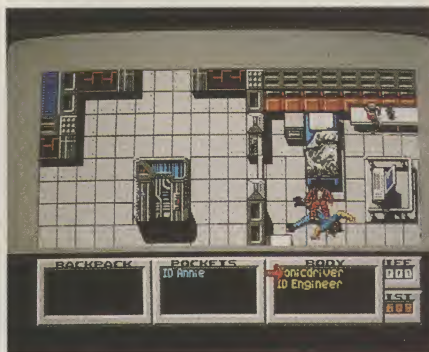
PANDORA

The fisticuffs fly with FIREBIRD

PANDORA does its best to offer a modicum of originality as you move about a single-level spaceship exploring cabins, searching bodies, interrogating terminals and evading hostile parties.

An effective combat system gives a continuous read-out of the energy of both parties combined with comic-strip-style BOPs and OWs and a clever blow-timing system. There are lots of different characters to interact with in a limited fashion by exchanging objects, and the gameplay mixes combat, treasure location, and puzzle solving quite effectively.

To spoil the scenario, you have only one life and can lose it very easily while getting used to the gameplay. Once acclimatised, only foolishness or experimentation will kill you off, giving you more time to concentrate on the puzzles. Unfortunately the bulk of



ST - You're searching the body of the engineer. His inventory is displayed in the bottom right-hand box - can his ID give you access to the engine room?

these lack variety and rely entirely upon trial and error - does the Engineer's ID get me through that force-field or not? Oops...no, it doesn't. Start again...

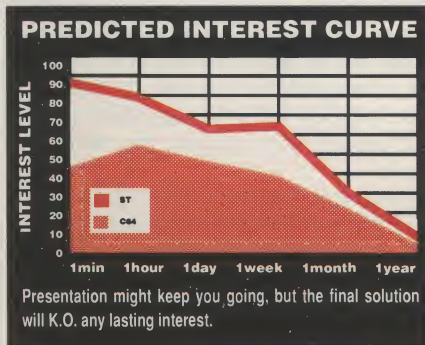
With a game like this, playability and presentation are going to make the difference between a package worth purchasing and one destined for the bin. Check the version boxes for the final verdict...

● Steve Cooke

RELEASE BOX			
C64/128	£9.95cs, £12.95dk	REVIEWED	
ATARI ST	£19.95dk	REVIEWED	
AMIGA	£19.95dk	IMMINENT	

ATARI ST VERSION			
Superb graphics and satisfactory gameplay generate sufficient atmosphere to gloss over the weaknesses of the scenario. By the time the atmosphere begins to pall, you'll probably have solved enough puzzles to give you renewed enthusiasm.			
GRAPHICS	8	IQ FACTOR	6
AUDIO	4	FUN FACTOR	6
ACE RATING 678			

C64 VERSION			
Eek! If ever there was an example of how 16-bit presentation can make a game, this is it - the 64 version is lacklustre on-screen and never succeeds in involving the player to the same extent as its ST cousin. Lacking atmosphere, the game reveals its flaws all too soon and fails to impress.			
GRAPHICS	4	IQ FACTOR	6
AUDIO	4	FUN FACTOR	4
ACE RATING 440			



THIS Gauntlet derivative presents a series of overhead-viewed mazes in monotonous, repetitive pseudo-3D style. You (and a mate if you want) manoeuvre your character through the mazes, blasting down prison doors, exploring blind alleys, unlocking gates, grabbing bonus objects, and doing battle with the ungodly.

On each level you'll find that certain dungeons contain your buddies, who will

RELEASE BOX			
C64/128	£9.95cs, £12.95dk	REVIEWED	
ATARI ST	£19.95dk	REVIEWED	
AMS	£9.95cs, £12.95dk	REVIEWED	
SPEC	£9.95cs, £12.95dk	REVIEWED	

ATARI ST VERSION			
More colour, more speed, and boring.			
GRAPHICS	4	IQ FACTOR	1
AUDIO	2	FUN FACTOR	3
ACE RATING 356			

C64 VERSION			
Rather more colourful, but still slow and boring. The ungodly occasionally get into a fit and run on the spot.			
GRAPHICS	3	IQ FACTOR	1
AUDIO	2	FUN FACTOR	3
ACE RATING 369			

SHACKLED

US GOLD's kid glove

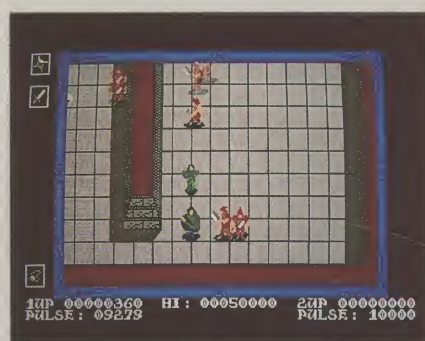
then follow you dutifully about the screen. Each buddy possesses a different firing style, which is adopted by the party until the discovery of the next amigo.

The ungodly are crude and unimaginative in their behaviour so blasting them isn't very satisfying. Despite the appalling presentation, the game idea still has a certain charm, but whether that would be in evidence once you'd actually PAID for the game is extremely doubtful.

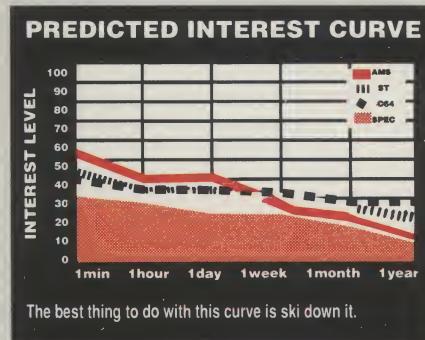
● Steve Cooke

SPECTRUM VERSION			
Not colourful, even slower, and boring.			
GRAPHICS	2	IQ FACTOR	1
AUDIO	1	FUN FACTOR	2
ACE RATING 297			

AMSTRAD VERSION			
Colourful, slow, and boring.			
GRAPHICS	4	IQ FACTOR	1
AUDIO	2	FUN FACTOR	3
ACE RATING 380			



ST - not surprisingly, this is the best of the versions available. We leave the 8-bit screens to your imagination.



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FORGET

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YOU ARE OUR ONLY CHANCE...

DREAM-UP 45.84.29.79



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STREET FIGHTER

TM

....NOT



CBM 64/128

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Screen shot from Spectrum version.



Screen shot from Amstrad version.



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KILLDOZERS

LANKHOR go to war

MEGALOMANIAC computers have this habit of popping up and threatening the world. Let's look on the bright side though - you can go after this one with a hard-charging, mean-blasting, robot-crunching tank.

The action takes place in a six-floor facto-

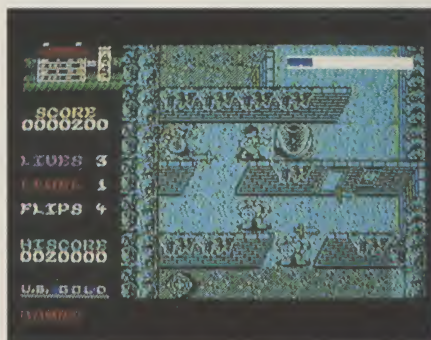
RELEASE BOX		
ATARI ST	£19.95dk	OUT NOW
No other versions planned		

ry complex. Each floor is made up of 26, top-viewed rooms. On each floor you have to locate a captured engineer and make it to the exit before the time limit runs out. The time limit is triggered by picking up the engineer and reflects the speed of the tank.

At the start you get a choice of tanks with different ratings for armour, firepower, hit-points and speed. These vary from game to game but generally, the faster the tank the less powerful it is. You're armed with three types of missile: destructor, absorber and armour piercing. The absorbers can be

used to drain an enemy's firepower and add it to your own energy reserves. Once an opponent is without firepower you can either take him straight out with destructors or, if he's got heavy armour, weaken him further with armour piercing missiles.

The robot defenders are armed with the same weapons and are frequently much more powerful. However they aren't very mobile or intelligent. As you go through the levels they get tougher but the biggest problem you'll have is one of mapping. This is



That sphere has got it in for you and don't go on the tartan squares because they disorientate you.

ATARI ST VERSION

The graphics are nothing to write home about, but that's no surprise with a construction set included. The music and effects are better, although a meatier explosion would have been appreciated.

GRAPHICS 5 IQ FACTOR 4
AUDIO 6 FUN FACTOR 6

ACE RATING 589

because there are one-way gates which can easily trap you.

The gameplay is suitably hectic - charging around blasting and switching missiles - but the exploration is the only thing that adds variety. Of course for real variety there's the construction set. This enables you to work out your own game screens. It will take a lot of work but enhances the long term value.

● Bob Wade

PREDICTED INTEREST CURVE



The construction set preserves interest, but it still lacks sparkle.

KIDDIES are in need of help, and you're on your way. They're trapped inside mirrors, in a castle bursting with things you'd avoid in dark alleys.

As you move up the screen it scrolls downward - obviously this is a very long, thin castle. Initially your only weapons are your fists, but later on you can pick up more dangerous devices like bombs (Spectrum) and boomerangs (Amstrad).

Mostly you'll encounter henchmen who look and behave much like yourself. There are also bigger, meaner-looking defenders who throw knives or fireballs, and hits from any of these deplete your energy. You face a more abrupt end if you run into a mine or water - you'll cash in your chips pronto.

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AMSTRAD VERSION

The graphics are garish and blocky. The gameplay is easier than the Spectrum version because the knife-throwers are replaced by predictable fireball-throwers.

GRAPHICS 4 IQ FACTOR 2
AUDIO 3 FUN FACTOR 5

ACE RATING 505

DESOLATOR

US GOLD crack mirrors

At the end of each floor there's a tricky screen where disembodied heads bounce around the screen. You've got to let all of them have a bunch of fives in the chops to move to the next level.



SPECTRUM - Watch out for that heavily-armoured guy chucking the cutlery in all directions.

SPECTRUM VERSION

No real attempt at colour here but it has detail and good speed. A reasonable version made difficult by the knife-throwers.

GRAPHICS 4 IQ FACTOR 2
AUDIO 3 FUN FACTOR 5

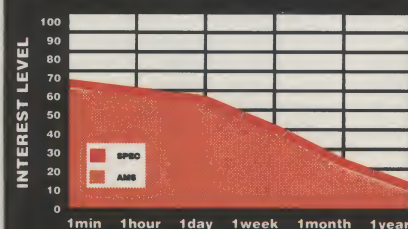
ACE RATING 505

On the way along you can pick up extras like money bags and energy. Warps will move you around the screen and jars act like smart bombs. Most important of all are the mirrors. Give them a good thumping and out pop the children for you to collect. Other objects on walls also come into play - clocks freeze the bad guys for a time - and some walls can be punched through.

The game's easy to get into, but ends up being frustrating because it's virtually impossible to stay clear of all the trouble. Random elements, like materialising baddies, rolling barrels and such, just make life too hairy.

● Bob Wade

PREDICTED INTEREST CURVE



Not big enough to hold you for long and too many random elements.

CORRUPTION



Atari ST screen shots.

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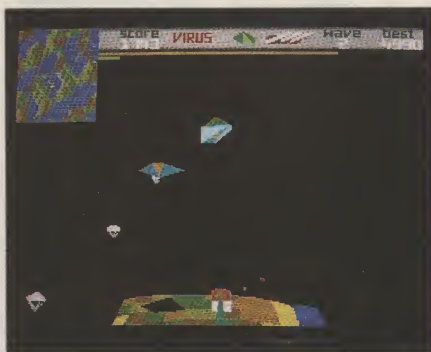
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Before: You've just caught up with a bomber - a tough task considering how fast it's moving - but the blighter's still dropping virus bombs across the landscape.



After: A quick burst of cannon fire from your hoverplane helps make the world a cleaner place - and earns you 800 points into the bargain!



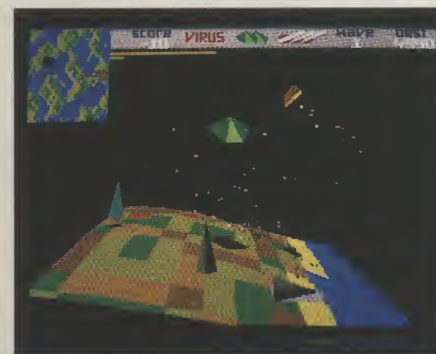
Before: as you fly in to refuel, a drone pounces on you from above. Its purple and yellow colour scheme indicates that it's mutated, making it rather tougher than normal.



After: you've pulled away from the planet surface in a bid to outclimb the mutant, but he's kept the upper hand. Time to loose off a homing missile before your shield runs out!



Before: you've found an alien seeder (background), but the explosion at bottom right and the shadow next to yours mean a drone's bearing down on you, firing as it goes.



After: the drone's on screen now, but another of his shots has wrecked that radar pylon in the foreground. This leaves a blank area on your scanner (top left) as you can see.

FROM LANDER TO VIRUS

At the risk of blowing our own trumpets, we'd like to remind you where you saw this one first. Remember our Solid Stuff feature way back in ACE Issue 2? That article carried the first shots of the finished *Zarch* printed anywhere. Remember the review we did of it the month after? Or the photos of the ST conversion - not even known as *Virus* at that stage - back in ACE Issue 8? Both of those were firsts too.

Even before any of this, we were onto the story. Check out the news pages of ACE's very first issue, if your collection goes back that far, and you'll find the original demo *Lander* pops up in a story there - almost a year ago. It's an emotional experience to see a game this good right the way through from a sneak preview back before the Archimedes was even launched to a fully-fledged ST blockbuster with Amiga and Spectrum versions to follow, but that's just what we've done here on the ACE team.

If you want to know what's already happened, there are plenty of other mags you can read: if you want a vision of the future, there's only ACE.

VIRUS

Can FIREBIRD stop the rot?

PANIC and you're dead, stay calm and you probably aren't human: the aliens have come to spray red virus all over the planet, and you're the only thing in their way! But can you stay in control of your hoverplane? Can you figure out the firing angles? Can you get them before they get you?

Yes folks, at long last the game everyone wanted and (almost) no-one could actually get a shot at last year has made it down to the 16-bit machines. Down that is from Acorn's 32-bit Archimedes where, under the name of *Zarch*, it was the sensation of the Personal Computer World show. On the Archie a demo of the game - then only called *Lander* - went out with every machine sold, thus drumming up a nice demand in advance for *Zarch*'s publishers Superior Software. Firebird will have

no such head start with the game on the other machines but then - on the ST at any rate - they really aren't going to need one.

Let's face it, this game is absolutely the cat's whiskers. It's got that rare combination of stunning over-the-shoulder attraction, instant heart-shouder playability and a monstrous long-term challenge. Even before you play you'll be hooked by the demo's display of rolling landscapes, swooping action and scintillating explosions. Just wait till you get in the pilot's seat though: you'll be staggered!

It's hard to overstate just how exciting the game is, and how satisfying the controls are to use once you've mastered them. Using only mouse movements to tilt your hoverplane and presses on the left button to burn fuel, you can string together flying moves that are fluid, dizzyingly fast or

981
ACE RATED



Taking off from home base, you head off in search of enemy seeders.

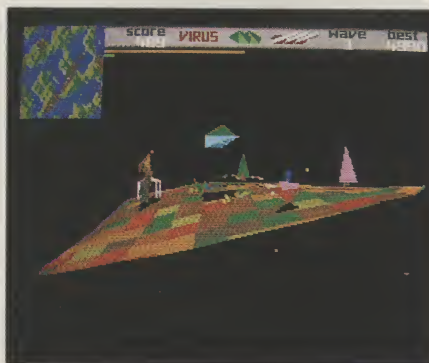
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breathhtakingly delicate. Pour on the thrust and throw the ship over to one side as you tear up off the landing pad, and at once you're hurtling into the heart of the action.

Once you've figured the controls out well enough to reach one of the blips on your scanner, then things really start getting interesting. At first you'll be after seeders - flying saucers that lazily drift over the landscape spraying the foliage, landing occasionally to provide a stationary target - but you'll need good control skills to bag even these stupid, defenceless foes. As for the pests (tiny garish homing missiles) and drones (alien hoverplane interceptors) which attack you even on the first wave, these can be so tough that you may well resort to homing missiles. It's a shame if you do, though, because homers are in very short supply, and on the next few waves you'll have far greater need of them.

Just what's so difficult about those later waves? Everything! The game starts throwing drones, fighters (like drones only meaner), bombers (fast transports dropping virus bombs - and watch out for the bomb-bursts!), pests in their droves and much worse, as well as the obligatory seeders plodding away. Increasing gravity is also a problem,



A seeder's certainly been this way: just look at those discoloured trees!

and since the landscape's only decontaminated every fifth wave there's the risk of being completely overrun if you don't work fast.

Comparisons with *Oids*, *Thrust* or plain old *Defender* might give you a taste of the get-down arcade feel to this one's gameplay, but really *Virus* is in a class of its own. It's visually just about perfect too: watch out for



A pest zooms down below your hoverplane. It's trying to ram you, but its aim was thrown by that quick burst of thrust you've just used.

the flying fish and the sea monsters! The sound effects are both entertaining and useful, the game logic hangs together nicely and the technical achievement will really amaze all you code-freaks out there. It's just too good to be true!

● Andy Wilton

ATARI ST VERSION

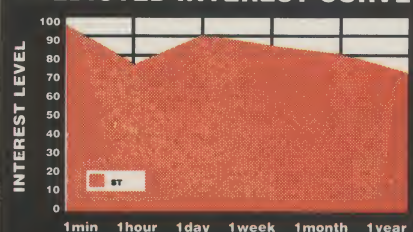
Pictures can't do justice to the graphics on this one, but they're the least of its charms. A game that looks this good simply has no right to be this addictive too. You never dreamt your ST could do these things. Buy it and believe it.

GRAPHICS 10 IQ FACTOR 3

AUDIO 6 FUN FACTOR 9

ACE RATING 981

PREDICTED INTEREST CURVE



Tough to learn, but so addictive!

KRELLANS may be mean alien types, but at least you can see their starships, which is more than Zaldrons will allow you to do. And as commander of an Invincible Class Heavy Cruiser, whose job it is to keep Alliance space clear of these invaders, this can pose you problems.

If you've already started thinking of stunning Amiga-style 3D dogfights, think again.

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AMIGA - In the middle of a battle with some evil Krellans. You could try disabling one or more of them and then use your tractor beam to tow them to the nearest starbase (that bumps your kill rate up nicely).

STAR FLEET 1

ELECTRONIC ARTS beam up

Star Fleet 1's graphics are far from state-of-the-art and there's not a cockpit view to be seen. The screen breaks down into sections including a grid-map of the region of space you're currently patrolling and an adjacent grid that 'zooms in' on the particular sector you're in. Towards the top of the screen is the

text window where messages are displayed.

The aim is to work your way up through the ranks from a lowly recruit to an Admiral by successfully completing a number of missions, each requiring you to destroy a set number of enemy ships within a time limit. You're armed with phasers and torpedoes and every successful mission bumps your kill rating up a few per cent.

Star Fleet uses a very old game style but it can still be fun to play. Special missions appearing later in the game keep you interested for a while but the repetitive nature of the game soon sees your interest waning.

● Andy Smith

AMIGA VERSION

The graphics are spartan and sound is not impressive. The game's controlled by clicking a mouse pointer on various boxes, which works well as there's no real-time element. *Star Fleet 1*'s fun to play but it's a bit long in the tooth and the nature of the game's very repetitive.

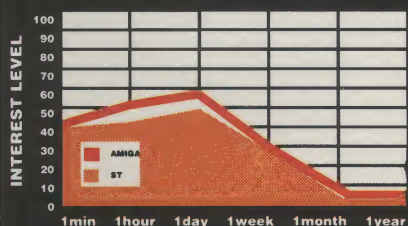
GRAPHICS 1 IQ FACTOR 3
AUDIO 2 FUN FACTOR 6
ACE RATING 386

ATARI ST VERSION

The game's the same on the ST but plays much slower - tediously slow at times. You'll find it hard to stay enthusiastic playing *Star Fleet 1* on the ST.

GRAPHICS 1 IQ FACTOR 3
AUDIO 2 FUN FACTOR 6
ACE RATING 363

PREDICTED INTEREST CURVE



Nostalgia for an old game-style and initial intrigue succumb inevitably to the monotonous gameplay.

THE GREAT GIANA SISTERS

Headbang with RAINBOW ARTS

LITTLE Giana from Milano is a troubled sleeper, it seems. She and her sister Maria regularly dream of a



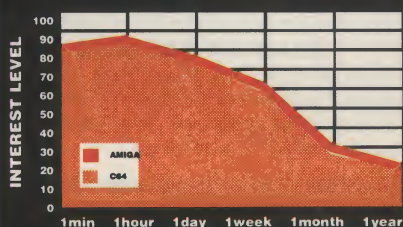
AMIGA - You can jump up and get those bonuses - but don't fall in the water!

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SPEC	£8.99cs	IMMINENT

strange, mysterious world of puzzles, hazards and dangerous creatures. Your job is to guide Giana (and her sister, in the alternating two-player mode) safely on her quest to find a huge, magic diamond that forms her only means of escape.

Giana Sisters plays more than a little like *Super Mario Brothers*. It's basically another scrolling platform game with bonuses to collect, creatures to avoid and timing/control problems to overcome. There are some amusing little twists, though. For example, how do you deal with those nasty beasties? Simple - jump on 'em! And to collect bonuses you jump up and bash the marked bricks

PREDICTED INTEREST CURVE



Playable and fun for a while, but ultimately lacks depth.

C64 VERSION

Excellent graphics, and as much playability as the 16-bit versions.

GRAPHICS 7 IQ FACTOR 3
AUDIO 6 FUN FACTOR 8
ACE RATING 701

ATARI ST VERSION

There's little to distinguish this from the Amiga version. Nice and colourful, with good sound.

GRAPHICS 8 IQ FACTOR 3
AUDIO 7 FUN FACTOR 8
ACE RATING 713

with your head! These bonuses give you anything from extra lives to the ability to shoot 'dream bubbles' which take out those creatures in your way.

The graphics are cute, and the accompanying music jaunty, but it's questionable whether you'll stick with the game through all 32 levels to reach that magic crystal.

● Rod Lawton

AMIGA VERSION

Pretty graphics and a nice little tune make an attractive game. Not much depth, but fun nonetheless.

GRAPHICS 8 IQ FACTOR 3
AUDIO 7 FUN FACTOR 8
ACE RATING 713

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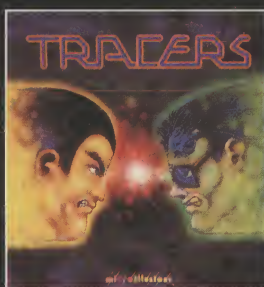
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Amiga screen shot shown



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CAPTAIN Cobra drives the meanest, lowest-slung battlecar this side of the Dagenham. The flowery scenario prose relates a wondrous tale of lost jewels and windswept desert landscapes. Forget that, let's go do some blasting.

Vertically-scrolling shoot-em-ups are nothing new, but everybody loves a good one with loads of action. Hewson have been responsible for some of the best, so have they done it again?

The first thing to notice is that the scrolling is under your control, you aren't forced to go at the computers pace. It's useful because you really do need quick breathers in between the action.

The robot defences come in four main types: free roamers, emplacements, tracked and patterned. The free roamers generally tend to home in on you as soon as they appear. Like all the other defences they intermittently fire bullets that are very accurate if you don't shift yourself fast. Similar to the roamers are the patterned robots that, when triggered to appear, charge around the screen in a set pattern regardless of what you're up to. It's not just the bullets you have to worry about either - running into defences also proves fatal.

The robots on railway tracks are a cunning breed. They shuttle up and down loosing off fire and are much more awkward to hit than homing or static robots. The stationary robot emplacements tend to have higher rates of fire than the others, but at least you know they'll stay where they are.

A particularly nasty form of static defender are the missile firing turrets. These produce relatively slow-moving missiles that home in on you wherever you are on the screen. The missiles can be shot, the only problem is to get on the right line to do it in time - particularly if you're facing more than one turret.

If you get far enough through the defences the battlecar goes spinning off the

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top of the screen firing wildly and takes you to a new level. The background graphics change and, of course, the robots get nastier. They fire faster and appear in ever more unpleasant combinations. They also start taking several hits to destroy.

The programmers obviously thought they were making life too easy, and have added a cruel feature that will make you curse. If you spend too long without scrolling the screen up, a plane zips in from the side of the screen and drops a bomb at you. You can avoid it if you're fast but it means you can never relax completely.

The most crucial element in ensuring survival is the use of defence beacons. These are spheres that flash through a range of colours, and depending on what colour they are when shot can either help or hurt. There



The Marauder is about to narrowly escape being bombed from the air. The plane has passed over and the yellow bomb has just missed. However, you're still in danger from the other two robots. Note also the green beacon which would jam your laser if shot.

MARAUDER

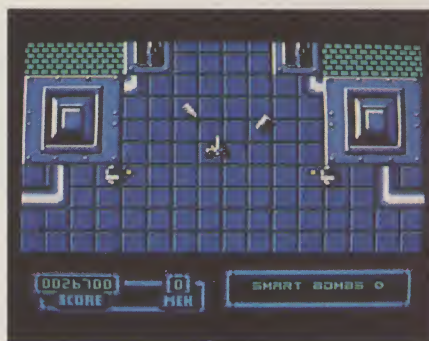
HEWSON go plundering

are six colours: red gives a smart bomb, yellow a shield, cyan a life, blue reverses the controls, purple loses a life and green jams your laser. The shield, control reversal and

jamming effects don't last for long, but it can be enough to get you through a tricky spot using the shield, or to kill you when suffering from the other two.

This is a classic game for those who like learning attack patterns. Every game you can get a bit further because you know what's coming and can act accordingly. Working out the flashing sequence of the beacons also comes with practice and can considerably prolong your life. There isn't anything original here, but it's an extremely slick shoot-em-up that gives instant pleasure and addiction, and has plenty of difficulty to keep you going.

● Bob Wade



You're in deep trouble here. Missiles are homing in on you and there's a couple of free roamers closing in. No smart bombs left, so it looks like the party's over.

C64 VERSION

The different backgrounds are well designed, as are all the robot defences. Naturally it all scrolls smoothly. The music is excellent, but there's not much in the way of effects.

GRAPHICS	8	IQ FACTOR	2
AUDIO	8	FUN FACTOR	8
ACE RATING 791			

PREDICTED INTEREST CURVE



Just the sort of classy shoot-em-up we've come to expect from Hewson.

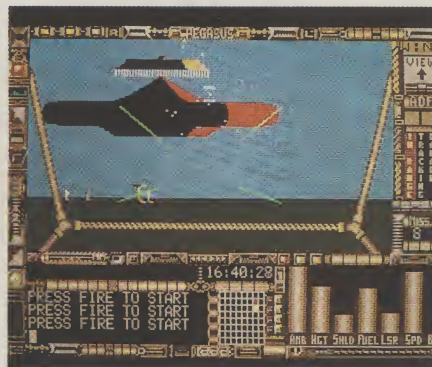
PHANTASM

EXOCET's academic exercise

DEJA VU is what the French call it, that feeling that somehow, somewhere, you've seen it all before. Exocet's *Phantasm* certainly conjours up that feeling. Where you've seen this game before is in the form of CRL's brilliant *Academy*.

In *Phantasm* you're in command of the ultimate space skimmer - Pegasus - as you zoom around an alien moon looking for eight Re-constitutions situated at random on its surface. These Re-constitutions are able to reform enemy craft you destroy in their area - so watch it. Your mission is to destroy these nasty pieces of work and...and...well, that's it.

Right at the start you get to choose which sector of the moon you start in, and from then on it's a case of exploring the solid 3D landscape and doing battle with the many alien vessels - flying saucers, tanks, ground-based fortresses and watchtowers, to name



Pretty enough sprites, and nice lighting effects. Shame it's been done already.

but a few. The easiest of the four levels is a kind of training mode where the viewscreen tells you what type of craft you're looking at. Other, higher, levels just tell you your kill total so far. A series of bars to the bottom right of the screen tells you your speed, fuel reserves, shield strength and so forth, while to the top right of the screen is a compass with automatic direction finder (returns you to your docking vehicle). The skimmer flies

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AAARGH!

Smashing down the MELBOURNE HOUSE

NEVER mind Aaargh! Yawn! would be more apt. The game's far too easy to beat and no matter how good the sound and graphics are, you're just not going to want to spend much time playing a game you know you can beat easily.

The plot's jolly enough - take control of either an oversized ogre or a dinosaur and

their sustenance and what could be better than a huge hamburger or a whopping slice of pizza? Especially when your monster only has a limited amount of stamina - the constant barrage from the villagers trying to fire their weapons at you, and the hornets that will insist on crashing into you, take their toll. Attack is the best form of defence here and it's easy enough to line your monster up with the villagers' cannon and bash it into oblivion. Hornets can be disposed of in similar fashion. Any spare moments are best spent chasing and eating as many villagers as you can catch.



Bash those buildings, eat those people...

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AMIGA	£19.99dk	OUT NOW
No other versions planned		

smash your way through village after village searching for five Roc's eggs. You need to collect these before you get a stab at stealing the golden egg, hidden beneath a volcano. The eggs you need are usually concealed inside one of seven or so buildings in each scene. You don't know which contains the egg (that's if any of them do) until you've bashed them to the ground. You shouldn't be disheartened if a building fails to reveal an egg though because it will probably reveal something that's almost as important - food. Dinosaurs and ogres need

ATARI ST VERSION

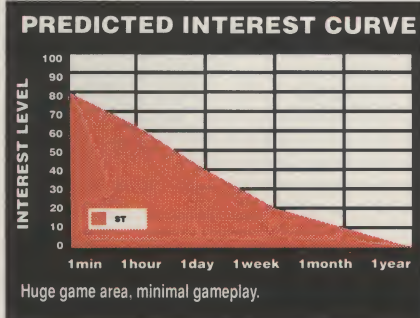
Graphics and sound are distinctly 8-bit stuff, not that *Academy* ever excelled in these departments anyway. Take away the latter's gameplay, though, and you're not left with much.

GRAPHICS	6	IQ FACTOR	3
AUDIO	5	FUN FACTOR	6
ACE RATING 404			

just like that in *Academy*, even down to the little rocking motion when you collide with another craft.

Basically, the similarities between *Phantasm* and *Academy* are too numerous to list. It would be quicker to list the differences - *Phantasm* offers only one mission, one skimmer and none of the gameplay. And at £19.95 it's not even budget.

● Rod Lawton



AMIGA VERSION

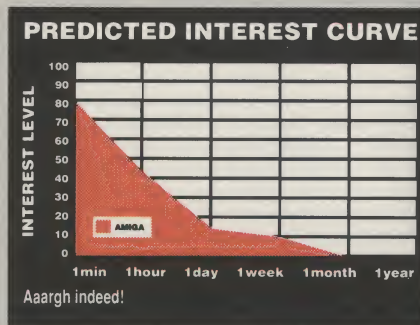
Good graphics, atmospheric sound and good gameplay but not enough challenge to generate the excitement that will keep you playing.

GRAPHICS	8	IQ FACTOR	1
AUDIO	7	FUN FACTOR	6
ACE RATING 261			

Having found yourself an egg you then have to fight the other monster to keep it. Extremely difficult until you discover the knack that makes it a doddle.

Collect the five Roc's eggs and you then have to make your way along a short path (removing any obstacles on the way) to the golden egg. Collect this and you can start the whole process over again. *Aaargh!*'s nice-looking, but you'll only play it for a short time before you become bored.

● Andy Smith



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SARGON III

LOGOTRON's brain-mangler

FAST reflexes and a quick trigger finger will do you no good here. This chess program from Logotron would tax the old grey cells of Kasparov himself. Well, maybe not, but even on its easiest level, *Sargon III* is a toughie. In a play-off against the established *Chessmaster 2000*, no clear winner emerges, meaning that the newcomer is certainly no pushover. The game comes with a comprehensive manual which even teaches you the moves of the pieces. The only problem is that if you need to know that it's going to take you a long, long time to beat the computer.

So *Sargon III* plays well enough, but what does it look like? The news here is not

so good I'm afraid. The 2D-only display is basic, to say the least, and up against the several more polished chess programs around it looks (even if it isn't) extremely amateur. This isn't one for impressing the neighbours, in other words.

Sargon III won the PC World Magazine Microcomputer Chess Tournament, apparently, and has beaten a Chess Master rated 2209 – but for the average amateur, such



You're playing white and holding your own – at least for the moment.

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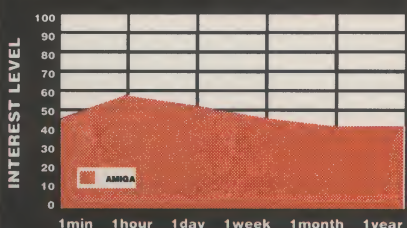
An awful waste of the Amiga's graphics potential, with some indifferent voice synthesis thrown in. Otherwise, thoroughly competent.

GRAPHICS	1	IQ FACTOR	10
AUDIO	6	FUN FACTOR	6
ACE RATING 553			

things are academic. The fact is that most modern chess programs are quite strong enough for the average user. What separates them is really attractiveness, ease of use and versatility. *Sargon* is easy enough to use, as versatile as any – but in terms of visual appeal is somewhere back in the Dark Ages.

● Rod Lawton

PREDICTED INTEREST CURVE



Being a strong program, it's obviously going to have staying power. The graphics, though, let it down badly right from the start.

PETER BEARDSLEY'S INTERNATIONAL FOOTBALL

GRANDSLAM slip up

8-BIT micro owners have got a marvelous football simulation in the shape of Ocean's *Matchday II*, but it's not only 8-biters who enjoy a good game of footy on their computers. Microdeal brought 16-bit owners *International Soccer* – not as good as it might have been – and now Grandslam are hoping to tempt us with a football sim endorsed by one of England's most talented players.

The game has a European flavour in that your team can be chosen from a list of some of the best (and worst) teams in Europe. You then find yourself in one of two groups of four, where each team then plays every other in their own group and the top two go through to the semi-finals.

The format for the game follows the

ATARI ST VERSION

The game features music and sound effects, and it's easy to switch between the two. You can also change the duration of the matches during the tournament from 5 to 20 minutes. The game lets itself down with a poor method of selecting kick strength and unconvincing animation.

GRAPHICS	6	IQ FACTOR	2
AUDIO	6	FUN FACTOR	6
ACE RATING 392			

usual pattern, i.e. you control the footballer in the best position to reach the ball. You control the strength of a kick during play by holding the fire button on the joystick while a meter climbs up the side of the screen.

The game looks good enough, but the poor animation of sprites and ball is disappointing. It can also be tough to see just who you're controlling once you've got several players milling about the ball. Probably the biggest thing to let the game down, though, is the overall control. This – and the fact that it won't take long to win the tournament once you've familiarised yourself with the game – makes for a sim stuck well and truly at the bottom of the second division.

● Andy Smith



Perhaps if Grandslam had spent less time on the advertising hoardings and more time on sprite animation, the game would have been better.

PREDICTED INTEREST CURVE



Far too easy to beat, and dull to play.

THE SENTINEL

AMIGA • Firebird £19.99dk

Mike Singleton pretty much says it all on pages 36-37, but for the record we thoroughly agree here at ACE: *The Sentinel* is one of the cleverest, prettiest, meanest games ever. The genius of the original concept plus some excellent conversion work to the Amiga make this an essential purchase.

The game's all about energy, height and visibility. Over the mountains, valleys and checkerboard plains of 10,000 different landscapes, you're caught up in an epic struggle to get above your opponents. It's dangerous work, absorbing trees and boulders to raise your energy level while avoiding the gaze of the rotating Sentinel and his assistants, the Sentries. With fast thinking and a good sense

of direction you can hop between fields of vision, gain height and sneak up on the rotters from behind. Hesitate or get disorientated on the other hand, and you'll be absorbed by the *Sentinel's* lethal stare.

The thing that really makes the game-play riveting is its unique combination of freedom and terror. The game just gives you the basic tools for the job, leaving you to tackle each landscape's problems any way you see fit. The wealth of choices can easily overwhelm you, especially with the *Sentinel* and a whole bunch of Sentries turning your way - and indecision kills!

UPDATE SPECIAL

Once you're hooked (and you will be), you'll find the game's password system a life-saver. Stop playing whenever you like, and a 10-digit code will let you start on the same landscape next time. Just as well really: 10,000 of the things would take you a while to get through!

Andy Wilton

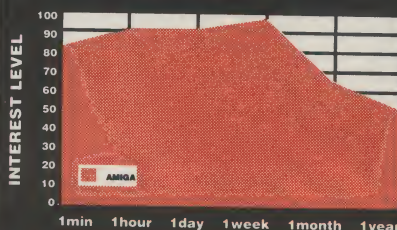
AMIGA VERSION

Colourful, fast and detailed, the solid 3D graphics here are a joy to behold. The soundtrack's great too, with a running background tune throughout and great bursts of theme music to mark changes of scene.

GRAPHICS 8 IQ FACTOR 9
AUDIO 6 FUN FACTOR 6

ACE RATING 963

PREDICTED INTEREST CURVE



You'll still be hooked this time next year!



You've only got seconds to make your next decision, and there are dozens of options open to you - but don't panic!

PLATOON

ATARI ST • Ocean £19.99dk • ACE RATING 668

C64 version reviewed Issue 7 - ACE Rating 801

Spectrum version reviewed Issue 7 - ACE Rating 530

Amstrad version reviewed Issue 8 - ACE Rating 654

If the first casualty of war is innocence, then the first casualty of conversion has to be gameplay. The difficulty tuning was pretty touch-and-go on the 8-bit versions of this one, but on the ST things are absolutely clear-cut. A simple tale of jungle warfare becomes simply unplayable: invisible assailants shoot you in the back, VCs leap

on you from the forest canopy and booby-traps face you with impossible situations. Tough problems are always welcome, but inevitable deaths like these are just silly. Controls are good though, even if the graphics aren't anything to write home about.

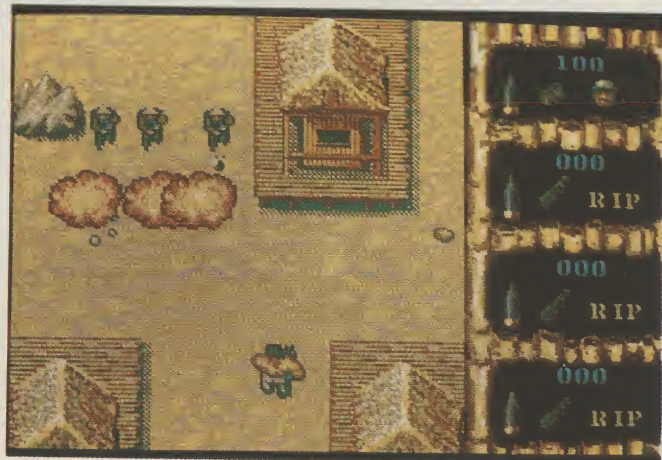
● Andy Wilton



LEATHERNECK

AMIGA • Microdeal £19.95dk • ACE RATING 897

Atari ST version reviewed Issue 10 - ACE Rating 897



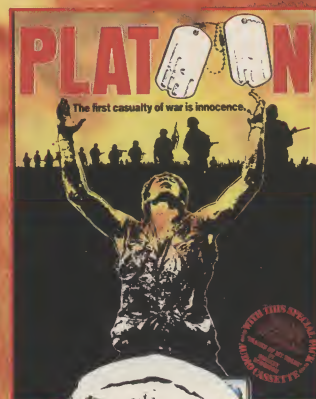
You want violence, you got it! Heavy duty violence complete with guns, grenades and mortars - that's what programmer Steve Bak's just converted for the Amiga, and boy is it fun! The game's a vertical scroller in the *Commando* or *Ikari Warriors* mould, but the graphics, sound effects and finely-tuned gameplay lift it into the ranks of the really classy. Leap out of the

landing craft with anything up to three buddies, machine-gun your way up the beach and then hand-grenade a gory path through the jungle and on into the village. Beautiful backgrounds, horrible screams and tacky box artwork all add up to a tasteless, mindless, wonderful piece of software. Go for it!

● Andy Wilton



ACADEMY RIVALRY



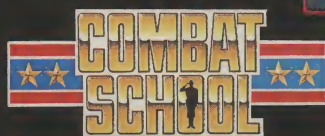
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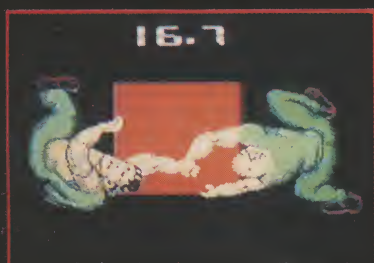
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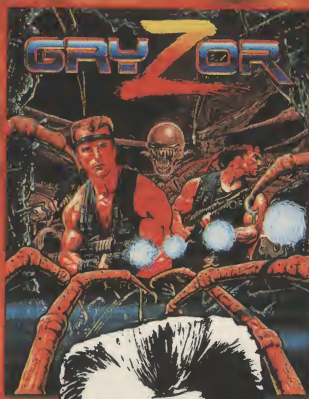


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IT ONLY FOR HEROES

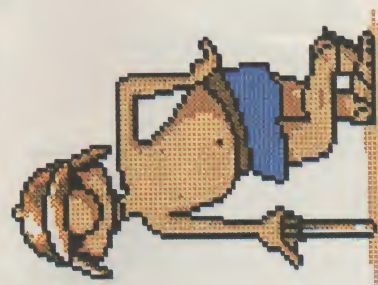


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Is *Buggy Boy* as good on the Amiga as the 64? Will *Charlie Chaplin* rediscover his sense of humour on the Spectrum? Are the *Lords of Conquest* just as cut-throat and power mad on the ST? Find out all this and more in the latest instalment of Updates.

AMIGA

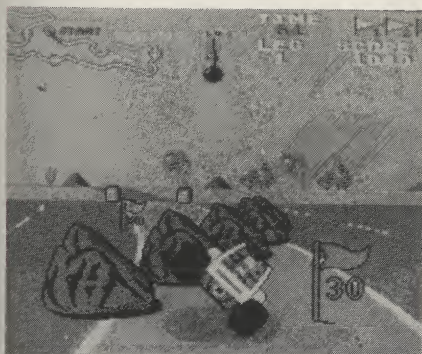
BUGGY BOY

Elite £24.99dk

C64 version reviewed issue 4 - Ace Rating 906

The graphics show off the Amiga's capabilities nicely with lots of smooth, fast action. The buggy is very responsive, accelerates quickly and is animated well. Its initial appeal is high and it's great fun to play, but there are two problems that drag it down a little. It's a bit too easy to beat, and with the recent spate of *Out Run* types games it has aged quite rapidly as a game format. Still a lot of fun but it won't last that long.

● ACE RATING 833



RETURN TO GENESIS

Firebird £19.95dk

Atari ST version reviewed issue 9 - Ace Rating 624

This horizontal scrolling shoot-em-up owes much to *Uridium* for its 'inspiration'. On the ST it was a competent blast that lacked any originality. Here the story is the same I'm afraid. It's got excellent graphics, some digitised speech and lots of speedy action. The strange rebounding action is still present to make control awkward. Another average shoot-em-up to join the hordes of others.

● ACE RATING 624

BLACK LAMP

Amiga £19.95dk

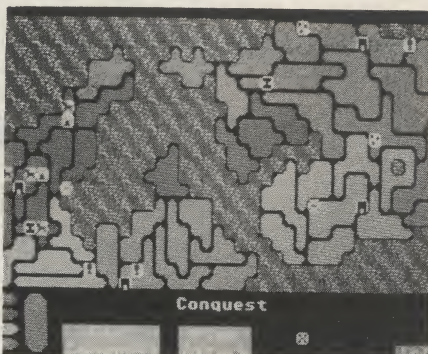
ST version reviewed issue 6 - ACE rating 813

Spectrum version reviewed issue 8 - ACE rating 612

This pretty, musically pleasant little arcade adventure gains quite a bit on its way over from the ST, but not in the one respect it was so desperately lacking in, namely game-play. Running round flip-screen castles and scrolling outdoor scenes makes a nice start, but when it's just about all there is, you're entitled to feel disappointed. *Sorcery* packed a good deal more game into a far smaller map, and that one came out years ago.

● ACE RATING 825

ATARI ST



LORDS OF CONQUEST

Atari ST £19.95 dk

PC Version reviewed issue 7 - ACE rating 835

The graphics may not be state-of-the-art but they're adequate and certainly won't spoil your enjoyment of this great piece of strategy software. You and up to three others can play against each other and try to conquer whichever game map you happen to be playing at the time. If you can't trust your friends (and once you start playing you won't be able to!) you can always try your hand at playing the computer - which can be made to play at any one of

three levels. Good stuff that you'll come back to whenever you feel the urge.

● ACE RATING 848

C64

DARK CASTLE

C64 £8.99cs, £12.99dk

Amiga version reviewed issue 7 - ACE rating 693

Things haven't improved with the arrival of the C64 version. Basically Brian, it's a very old-style platform game in which the hero has to make his way through several screens before confronting the dastardly Black Knight. Avoid the rats, bats and guards and you're in with a chance but that's a lot easier said than done. Dull graphics and animation do little to fire your enthusiasm and you'll probably get tired of playing the game after a relatively short time.

● ACE RATING 580

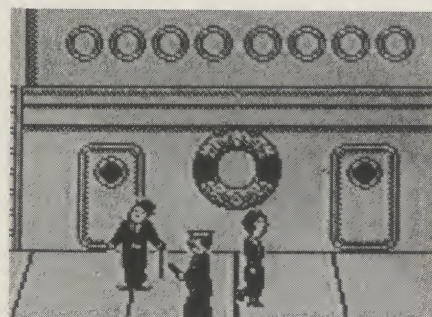
SPECTRUM

CHARLIE CHAPLIN

US Gold £8.99cs, £12.99dk

Amstrad version reviewed issue 10 - Ace Rating 392

The game in which that great comedian puts his penguin-walk into action to make several films. You've got to organise the shoots, control Charlie and edit the film. The final aim is to make a box office hit. The mono graphics are more suited to the Spectrum, but unfortunately the gameplay hasn't changed. It's still just a matter of wandering around trying to hit the other characters as often as possible. Hardly a true picture of the great man's talents. Ah well, back to the storyboard.



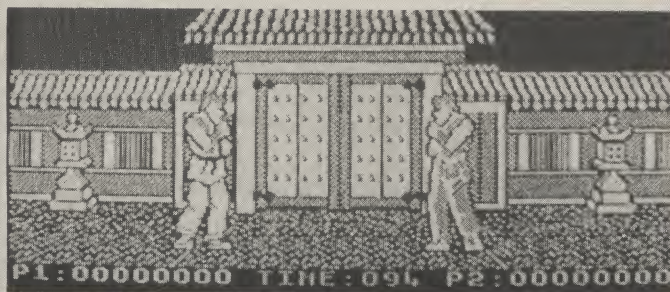
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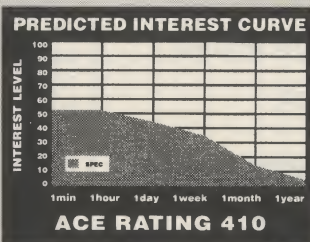


ARCADE fans may know this as the game that had pads you could actually hit. Sadly they don't make them that way now, and they certainly can't do that for the micro versions. Which

makes this just another standard beat-em-up, that brings nothing new to the genre.

● Bob Wade

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HERCULES

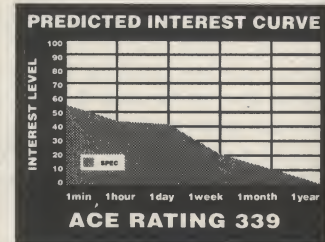
GREMLIN'S mythical game



SUBTITLED 'Slayer of the Damned'. You play the muscle-bound hero of Greek mythology and you've got 12 labours to complete. Well, you've actually got to hit (with your club) 12 icons that appear sequentially on-screen, whilst trying to survive being attacked by a skeleton. The graphics and animation are poor, the gameplay's just as bad and to cap it all it's boring. *Hercules* is not one of Gremlins better games.

● Andy Smith

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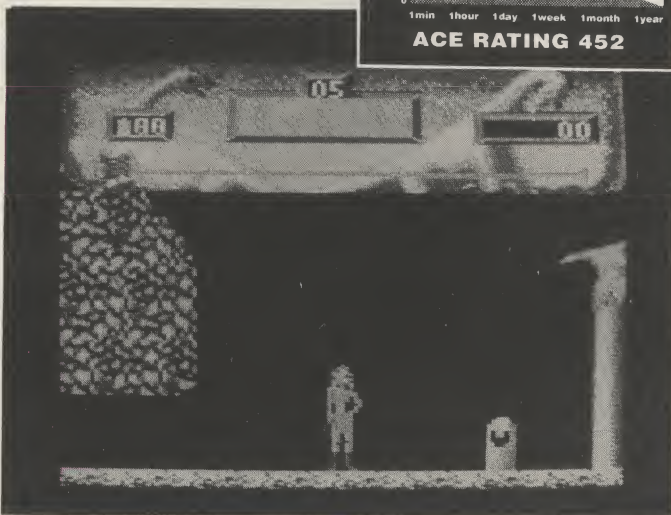
VIXEN

The gorgeous, pouting MARTECH?

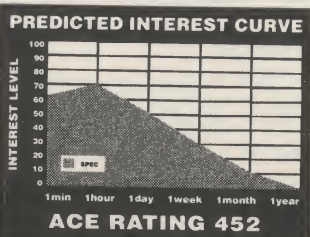
BULLWHIP time again folks! Indy Jones it seems is not alone in favouring tightly-bound strips of leather when it comes to dealing with nasties - dinosaurs in this case. Dinosaurs who have for eons terrorised the planet Granath. But now comes Vixen, raised from infancy by a pack of foxes. She now has the ability to change into a fox at will.

This sideways scrolling whip-em-up's got nothing original to offer and it's doubtful you'll be playing it in a year's time.

● Andy Smith



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Not a lot from TV GAMES

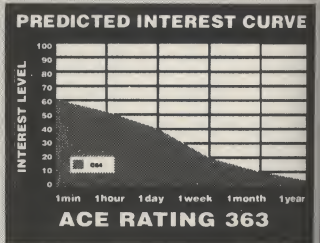


QUIZ games don't have a great reputation as computer games, and this version of the Paul Daniels' quiz show doesn't change matters. Up to three couples can take part in the quiz which closely mirrors the TV show. Basically it's just more gen-

eral knowledge and trivia questions, the like of which we've seen umpteen times before.

● Bob Wade

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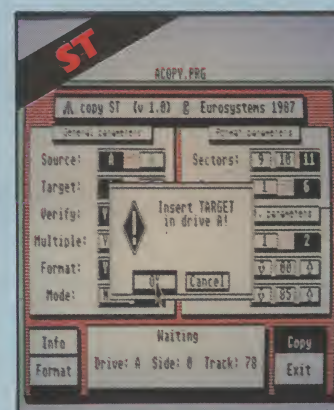
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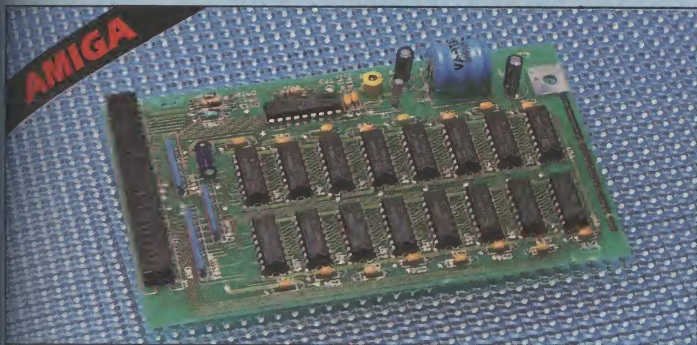


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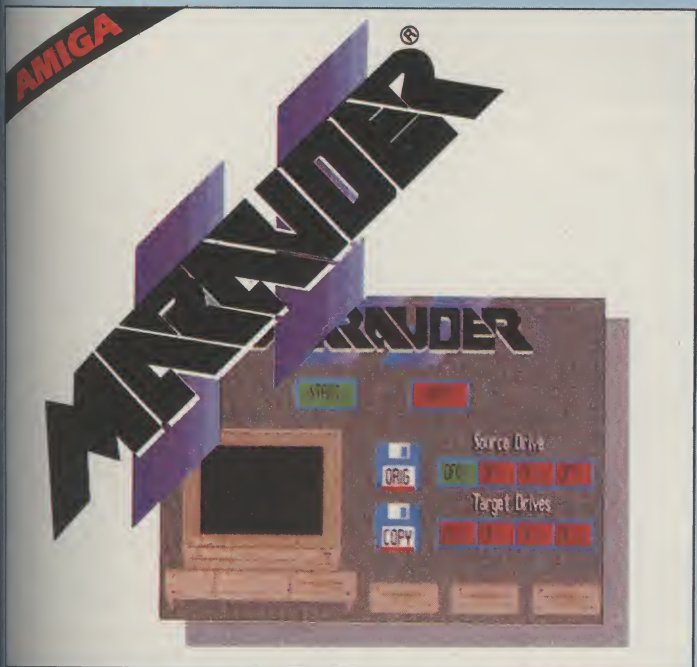


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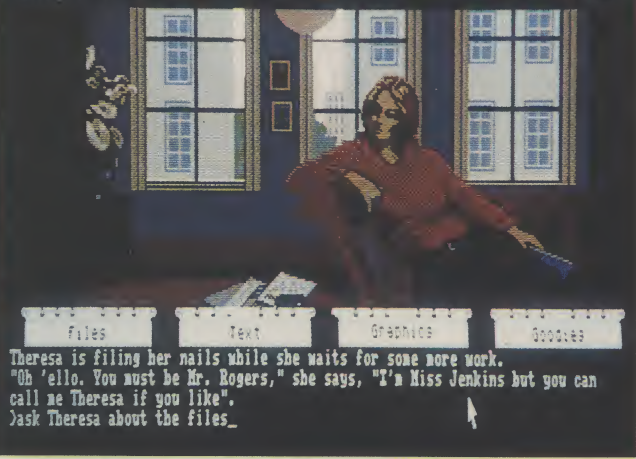
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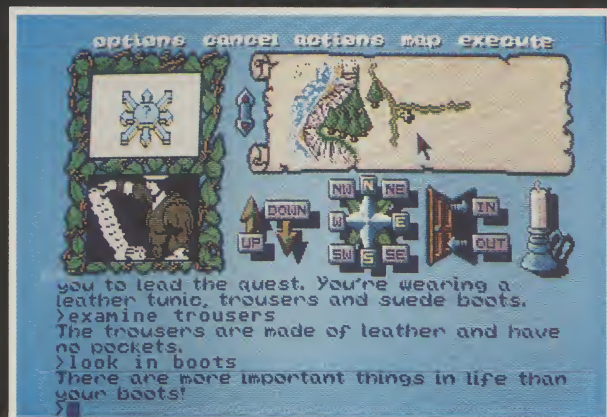
Magnetic Scrolls' latest game shows a whole new approach to adventuring. Is it the beginning of a brave new world? The definitive review awaits you...

OPPOSITE >

LEGEND OF THE SWORD

Rainbird AGAIN! Not content with Magnetic Scrolls, they've also turned out this radical auto-play adventure with a control panel that really puts you in command. Is this the business, or is it a bin-liner?

PAGE 74 >



DUNGEONS AND DRAGONS

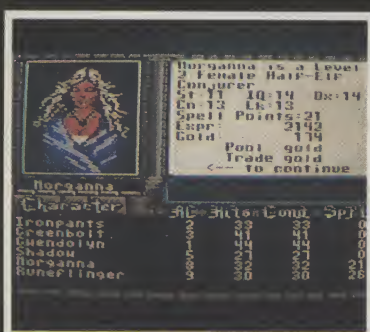
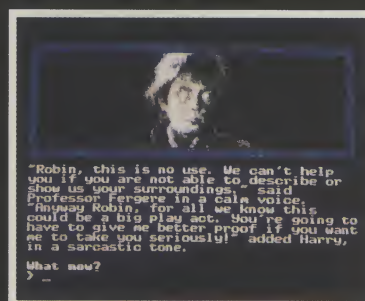
Can this long-awaited role-playing license live up to its £1,000,000 price tag? And where to now for role-playing software?

PAGE 74 >

MINDFIGHTER

Abstract Concepts long awaited game set in post-Holocaust Southampton hits the shelves. Will the copies stay there, or should you rush out and grab them?

PAGE 75 >



BARDS TALE RIDES AGAIN

No sooner is Bards Tale 2 out of the closet, than BT3 leaps upon us. Not only that, but the BT programming team are turning their talents to other uses.

PAGE 77 >

Balrog-beating...
 Spell casting...
 Staff waving...
 Rod toting..
 Text typing...
 Wizard wasting...
 Treasure
 grabbing...
 No-one does it
 better than The
 Pilgrim – and
 believe us, in this
 month's
 column he really
 surpasses
 himself. Check out
 the menu for this
 month's feast...

CRACKING THE PAWN... AND MORE

Throughout the section you'll find more of the Pilgrim's Players' Guide to *The Pawn*, plus a host of playing tips in No Problem!, Pat's Patch for budding adventure writers, news, gossip, and other adventuring tidbits...

CORRUPTION

RAINBIRD/MAGNETIC SCROLLS' inside deal

AFTER toying around with the obscure (*The Pawn*), the traditional (*Guild of Thieves*), and the whimsical (*Jinxter*) Magnetic Scrolls have finally managed to come out with a game that combines powerful programming, wry humour, and a compelling plot all at once. No doubt about it, *Corruption* is their best yet.

Some won't like it, however. This tale of insider dealing, infidelity and crooked business deals is unlikely to suit people who prefer to wander around picking up treasure. It does have other compensations, however...

First, you get a lot of bumph for your money, including a cassette tape that features prominently in the plot, a lot of documentation (including a personal organiser section that gives info on your movements), and some amusing guides to London eating emporiums, casino etiquette, and so on.

Second, the parser is powerful and flexible. It can understand possession, so will accept PUT THE CONTENTS OF THE ENVELOPE IN THE POCKET, or OPEN THE DESK'S TOP DRAWER. Combine this with a comprehensive use of pronouns, abbreviations and flexible programming, and you have a parser that's both friendly and fast in operation.

Thirdly, you get the usual excellent graphics which, in this case, are certainly more atmospheric than before and every bit as technically accomplished. Much of the gameplay revolves around interaction with other people and it helps if you can see them!

Finally, of course, there's the plot. Recently made a partner in the stockbroking firm of Rogers & Rogers, you soon realise that all is not as it seems. If you don't, you'll find yourself arrested by mid-day and found guilty of insider dealing (i.e. buying shares in a company about whose financial performance you have privileged information).

The game starts at 9.00a.m. and the clock advances by 1 minute with every stab at the RETRN key, so you're well advised to make maximum use of multiple commands to save time. Gameplay consists of finding and examining objects together with locating other characters whom you can question

using ASK person ABOUT subject or inform using TELL..ABOUT... Your primary objective is to put yourself in the clear, your secondary object is to get your revenge.

Characters move about the map in certain predetermined ways, so time not only limits gameplay but also changes it. In a normal game you map space, in this game you map time as well, taking note of when certain

920
 ACE RATED

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people perform certain actions for future reference. In this manner the game is very like Infocom's *Suspect* – even down to the level of particular actions: in both games, there is someone who hides documents in a car in the garage.

Corruption is great fun, will take quite a

while to solve, and should please everyone fed up with more traditional adventure subjects. Its only weakness is that the characters are all stereotypes, from the dumb blond to the macho businessman, and leave one wondering whether in eradicating whimsy from their games *Magnetic Scrolls* haven't

gone a little too far in the opposite direction.

LANDSCAPE	93	SYSTEM	92
CHALLENGE	91	ENCOUNTERS	95
ACE RATING 920			

LEGEND OF THE SWORD

RAINBIRD'S pretty little number

HMMMM... this is a hodge-podge, make no mistake.

Legend of the Sword combines a very well-designed user interface with a variety of puzzling and wandering that varies from the outrageously unoriginal to the strikingly different, with not a little frustration scattered along the way.

The screen (in full colour on page 72) is divided into four main sections. Top right is a map display with an attractive overhead representation of the paths around you and features such as trees, buildings, and tunnel entrances.

Top left are two small windows which keep changing during play, loading in simple pictures of your companions, surroundings and other objects when relevant. In this respect the display is slightly similar to Ocean's *The Never Ending Story*.

In the centre of the screen are movement icons you 'click' on. An icon will illuminate if movement in that direction is possible. On the bottom half of the screen you have the traditional text window where you can enter commands and read responses, location descriptions, and so on.

In addition, there are a series of drop down menu labels across the top of the screen which allow you to toggle between the map and a vocabulary display as well as select certain system commands and other actions.

Despite the number of different elements on the screen, it's very colourfully presented and never seems cluttered. You play the game like any normal adventure, except that many commands can be entered via joystick/mouse and vocabulary tables or icons. Clicking on the map makes it take up the entire screen – useful for getting your bearings before proceeding.

As you move about the map window scrolls very prettily, bringing new landscape into view. The whole impression is one of smooth, competent programming and makes the gameplay both smooth, simple, and satisfying.

When it comes to the actual tasks involved, however, the story changes slightly. With your five companions you must locate an enchanted sword and shield with which to destroy the evil wizard Suzar. The bulk of the action consists of exploration,

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locating items, and solving puzzles. Most of these are the traditional 'correct-use-of-found-object' type – it doesn't mean they're easy but isn't exactly a thrill if you've been solving such problems for the last five years.

Locations feature the usual dark interiors, tunnels, woodsmen's sheds and torture chambers, together with vast areas of open country and forest. The game is divided into several discreet sections which require passwords and/or special objects to enter and in this respect is, again, highly traditional.

Legend of the Sword is a beautiful looking game, but the pretty face conceals a rather second-rate traditional adventure. It's not that easy to solve, however, and I suspect that beauty (as always) will sell.

LANDSCAPE	75	SYSTEM	92
CHALLENGE	79	ENCOUNTERS	65
ACE RATING 815			

MINDFIGHTER

An ABSTRACT CONCEPT from ACTIVISION

FERGUS McNeill, the man who brought you *Delta 4*, *The Boggit* and (soon) *Smirking Horror* is a collaborator in this latest venture from Abstract Concepts, a new adventure design house run by Anna Popkess. *Mindfighter* is the first game from the label, previously previewed by the Pilgrim and now on general release.

The game runs under a new adventure authoring system called SWAN (apparently short for System Without A Name). Most large adventure houses use their own systems, but until recently writers like Fergus and Anna have relied on clever program-

ming of more widely available utilities such as *The Quill*. Having their own in-house programming system is a big step forward.

However, the small print reveals that SWAN is actually produced by, amongst others, Tim Gilberts of Gilsoft/*Quill* fame. This explains why the new system is something of a three steps forward, one step back affair – but more of that in a minute...

The game concerns a psychic child, Robin, who has somehow materialised in a post-holocaust Southampton where life is made even more miserable by Chinese militia. You have to find out what's going on,

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return to the present day, and prevent the disaster from taking place. At least I THINK that's what you're supposed to do! The game packaging doesn't help much, preferring to gloat over the horror of your situation.

This vagueness, plus other quirks, induces a good deal of frustration. The landscape is extremely difficult to map, with seemingly illogical geographical relationships between locations.

NO PROBLEM!

Be grateful! This month's hot tips come from: Mark Coleman, Russell Wallace, and The Pilg himself. Join the exclusive club by sending in your own tips for others to No Problem!, 4 Queen Street, Bath, BA1 1EJ.

SUBSUNK

Examine holster to find bullet, then load gun. Fire the gun in the locker room.
Pick the lock on the cabinet with the paperclip found in the captain's drawer.
To go into the dark black hole, type ENTER HOLE.

THE UNINVITED

Hack at the left hand chair in the lounge to get a key. Use it to open the cabinet in the master bedroom. Scare spectre with spider.

TRINITY

To survive in Earth orbit you must find a round airtight object in the fantasy land.
The snake can be distracted by feeding but it prefers live food.
The roadrunner will wake the dog, but if you drop the crumbs there it'll take some time to eat them first.

BEYOND ZORK

Open the chest from the lighthouse in front of the monkey grinder, but first ask him to open the door to the club.
Open the same chest in front of the Unicorn, then use levitation to get it out of the stable. This will earn you compassion.
One of the answers to the riddles is Lightning, the other is Youth.

The parser features TAKE ALL...EXCEPT as well as RAM SAVE and LOAD, IT, and OOPS but still retains certain archaic features. In particular, it will say THAT WASNT POSSIBLE when what it really means is I DONT UNDERSTAND which can be very misleading when trying to work out the solution to a puzzle. Even when you completely flummox it, and it admits I CANT UNDERSTAND, it doesn't say which word it's having difficulty with. It seems a long time since I've had to make these criticisms about the parser of a premium-priced product.

Similarly awkward is the method of conversation with other interactive characters - you still have to SAY TO person 'MESSAGE', rather than just NAME, MESSAGE. Other rough edges include occasional inappropriate responses as in:

>FILL JERRY CAN WITH WATER
ROBIN FILLS THE WATER.

...after which episode I found I was carrying WATER without a container.

What saves this game, however, is the drama of the setting; some excellent if rather sombre graphics; tough puzzles; and a useful icon-driven command system. These features do help to maintain interest, but let's hope that with Abstract Concepts' next game they're riding the lasting interest wagon rather than having to keep it going.

LANDSCAPE 88 SYSTEM 68
CHALLENGE 91 ENCOUNTERS 65

ACE RATING 820

PAT'S PATCH

Discovering bugs in your game is simple - finding the cause and correcting them is often much harder. Depending upon the nature of the fault there are several approaches, the first being to pinpoint where the fault is occurring.

The simplest way to discover which parts of code are being looked at and which are not is to insert a set of dummy messages in your code. Don't follow the messages with a WAIT or OKAY command or they will divert the system, simply follow them with END. The messages themselves can say anything you want - I tend to use 'message 1', 'message 2' etc and spread them through the code evenly. Then if while testing something unexpected happens a set of messages will be printed on screen corresponding to the points reached by the system.

Thus if you expect a condition towards the end of the low table to be read, put a message directly before and after it. If the condition has a WAIT or OKAY after it, the message following that condition should not be printed if the condition was successful.

Having pinpointed the area of a fault the next step is to discover what the fault is. The following short conditions (enter at the beginning of the low table and any suspect local table) will help you to see what the system is doing and whether it matches what you expect.

1) PRINT ROOM END (Prints the number of the current room to the screen).

2) IF (NOT (0 IN NO1) AND VERB "find")
FIND NO1 WAIT END (If the player types 'find

object' {and noun & object nos match} the player will be moved to the object).

3) IF (VERB 'bring') BRING NO1 WAIT END (As 2, but brings the object to the player - useful if you can't get at the object or have forgotten its location.)

4) LF PRIN VBNO LF PRIN NO1 LF PRIN NO2 LF (Prints the numbers of the words in the input being used by the system.)

The following lines should be inserted as and when needed with the number 'x' being specified each time.

5) PRIN CTR 'x' END (Where 'x' is the number of the counter whose progress you wish to monitor.)

6) IF (SET? 'x') MESS "marker" PRIN 'x' MESS "is set" END (Shows the state of the required marker.)

7) IF (RES? 'x') MESS "marker" PRIN 'x' MESS "is reset" END (Shows the state of the required marker.)

These few tricks should help solve many of your problems.

DUNGEONS AND DRAGONS

In a £1 million, 5 year project, US Gold and SSI have banded together to produce a series games based on the *Advanced Dungeons and Dragons* system. The first two games will be *Pool of Radiance* and *Heroes of the Lance*, both to be released later this year.

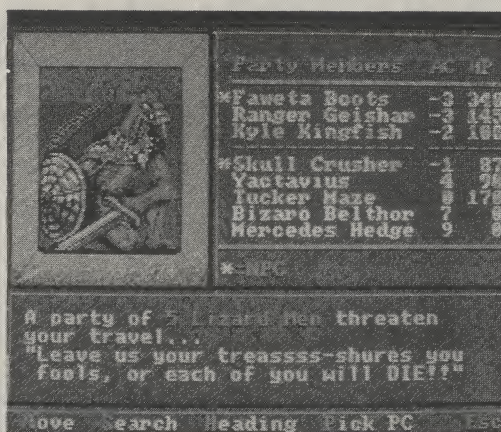
Pool of Radiance is set in the Forgotten Realms and features the usual D'n'D methods of character definition together with a large monster database and an on-screen presentation reminiscent of the *Bards Tale* series. First glimpses of the preview screens seem extremely promising, with lots of colour and excellent piccies. You can also define certain aspects of the display (e.g. your characters' appearance) yourself.

Heroes of the Lance gives you control of eight companions as you penetrate the ruins of Xak Tsaroth to retrieve the Disks of Mishakal. *Dungeon Master*-type sequences and graphics abound,

together with the usual character/party formations and, again, previews of the game look very exciting.

Best of all about this project, however, promises to be the long-term nature, with many games and support programs (including utilities to help set up your own scenarios) to come. We'll bring you further news as soon as we get it, but initial reaction to the material we've seen is enthusiastic, to say the least!

Up against the Lizard Men in *Pool of Radiance*



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Rimrunner	-	6.25	D2	6.25	D3
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Shoot. Con. Kit	-	10.25	D5	-	-
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The Travellers' Times

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Price: Free with this copy of ACE

WE'RE FAMOUS!

Adventurers are rapidly becoming the centre of attention from software houses as role-playing and fantasy games continue to take off in the States like never before.

Latest boost to us key-tappers is the announcement by Mediagenic (formerly Activision) that 'story telling' software is to be made one of their prime areas of investment over the next few years.

The company have also hinted at extravagant plans for Infocom, whom they bought out some time ago. Larry Sparks, newly appointed marketing manager in the UK, is reportedly unhappy at the previous lack of promotion of Infocom titles in this country and 'intends to put the record right'.

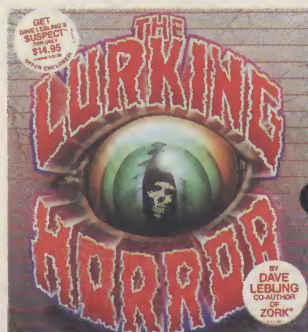
Mediagenic aren't the only ones to be jumping firmly onto the adventure/role-playing bandwagon. As you can see elsewhere on this page, Electronic Arts are now fast developing their *Bards Tale* series and looking for new RPG titles to release in the near future. Even US Gold is getting in on the act with *Dungeons and Dragons* (see page 75).

There was a day when us adventurers were universally despised by most software houses. Times they are a'changing...

INFOCOM TRILOGY

Mediagenic are to release a special compilation pack of Infocom titles, featuring *Hitchhikers' Guide to the Universe*, *Leather Goddesses of Phobos*, and *Zork I*. Retail price has yet to be fixed, but you can sure that it will represent a substantial saving on the original outlay for the three separate games.

Infocom are also hard at work on a new game with



Infocom - no longer the lurking horror in Activision's catalogue.

Douglas Adams. Watch out for *The Restaurant at the End of the Universe* in the not too distant future, as well as further collaborations with other famous authors - check this space for details.

SKARA BRAE BLASTED

Bards Tale 3 is almost upon us, in which you materialise outside the ruins of Skara Brae and must travel the seven astral planes to set the world to rights and restore the city you visited in *BT* and *BT2*.

The latest game in the series, released hot on the heels of *BT2*, adds two new classes of magic user - Geomancers and Chronomancers. This is of particular interest to experienced players of the system since a geomancer can be a development of an advanced fighter. In previous versions, fighting men simply did what fighting men have to do - fight. Now they can learn to cast spells as well. Chronomancers have been introduced for the purpose of mastering 'planar travel' - essential in this game if you are to restore order.

Other improvements include the listing of known spells (so you don't always have to refer to the manual), lots of outdoor locations, more puzzles, and three spells (identified in the game as 'ancient knowledge') which can be picked up by any

one. This last feature is significant because it can provide the means for any class of character to wield some degree of magical power.

LOOK - NO BARDS!

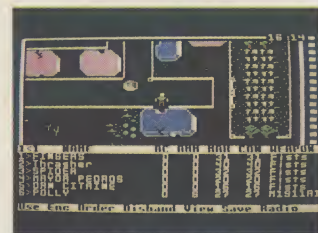
The programmers of the ever-popular *Bards Tale* series have started work on a new game that could improve substantially on the quality of computerised role-playing.

Wasteland takes you through a devastated world, battling against biker scum, new wavers, and rabid bunnies. In addition to the usual character attributes of strength, intelligence, and so on, the program offers 20 skills ranging from gambling to demolition and (Douglas Adams eat your heart out) bureaucracy.

Skills can be read up in the library and, in combination with your intelligence, lead to far greater character definition. Even better, you can now split parties of adventurers in order to surround enemies, increasing the tactical interest of the game.

Combine all this with dis

ease (*Wasteland* rabies amongst others), humour - as in 'You brutalise the biker scum for ten points' - and attributes for nationality and sex, and you have a substantial advance on the *Bards Tale* series and a very promising game. Watch out for the review, coming soon.



Wasteland - kill the bikers!

AAGHGH!

What can I do? Last month, I promised you the Ultima V review. This month, Origen Systems tell me it's been delayed yet again. I hereby break my staff in two, eat it, and hold my peace until the darned program actually materialises on my desk. My apologies, but when the game's not there, neither's the review. All I can say is that I'm sure that when it finally does arrive, it will have been worth the wait.



Bards Tale III - coming soon.

CARRY ON SCREAMING...

Games players come in all shapes and sizes and usually it's tough to tell, at first glance, what particular class of games they prefer. Could you spot a flight sim freak in a crowd? How do you instantly recognise a shoot-em-up addict? It's not easy is it? But there's one class of games player that always stands out in a crowd – the 'frustration games' addict. This particular type of games player has several distinguishing features which makes him readily identifiable. The large tufts of hair missing from the scalp, the blood-shot staring eyes, the tortured grimace and the clenched fists (with scratches from the glass of the shattered monitor). If you're now wondering why these people continue to play games that drive them up the wall, chances are you've never experienced the FUN that can be got from playing them. Because, strange as it may seem, those games that regularly drive you up the wall also happen to be some of the all-time greats. We take a look at these tormentors, and what makes them so, so frustrating...



ust imagine – you've just spent a fair slice of your wages or pocket money

on a brand new shoot-em-up. You've read the scenario and any other relevant information while the game was loading (Spectrum owners have probably made themselves a cup of coffee as well) and now you're ready to inflict some serious damage on some alien ammunition dump, or rebel planet, etc, etc. You launch into the game and you're going great guns – nothing, it seems, can survive your onslaught. Well, almost nothing, because one stray missile hits your ship and you've lost a life. This in itself is annoying but to your horror, the game restarts back at the beginning! You have to go through the whole thing again, even though you've still got two lives left! **NNYAARG!** It's all you can do to stop yourself throwing a brick through the monitor. Here at ACE we call this Restart Position Frustration. Serious offenders in this category are: *Army Moves*, *Salamander*, *Ghosts and Goblins* and *Rolling Thunder*. There are plenty more frustration categories besides this, though, and we take a look at the worst. We also list those games that make you wail with anguish – and not always for the right reason...

ANTI-BONUSES

These are the things that are not as they first appear. You're just about to pick up what you think's going to be a juicy bonus that will enhance your ship (or whatever) and as you do so the bonus turns out to be more of a hindrance than a help – it probably causes the controls to be reversed for a few vital seconds, or makes your ship slow down dramatically (or at least enough to make it darned near impossible to avoid the next shot fired at you by the enemy). Either way, it's a mean trick to play on an unsuspecting gamer. Also in this category is the bonus that sits in some extremely inaccessible place in the game and just wills you to come and collect it – 'Come on,' it whispers, 'I'll make your job so much easier.' So you go for it, and after a lot of struggle you manage to collect it. Now – and only now – you discover that it does virtually nothing. Arguably the worst case in this category is the bad bonus that you know is bad, but which is terribly difficult to avoid picking up. **NNYAARG!** again. Serious offenders here are: *Gothik* and *Sabre Wulf*.

DEATH TRAPS

Three major forms of unfair deaths occur frequently in games. The first is the Death Loop: you get caught and lose a

life, the game restarts at the same position, and before you have chance to react whatever killed you in the first place kills you again – and so on until you've lost all your lives and have to restart. Almost as bad is the Unavoidable Death, where you know that during a certain game, at a certain point you are going to lose one of your lives. Try as you might, there's just no way you're going to get past that stage without losing that life. The final frustration in this category is the Unforeseen Death – you've no way of knowing that at a certain point in the game a large slab of concrete is going to fall from the ceiling and remove one of your lives. You'll know next time right enough, but that's no consolation when you've spend hours getting to a certain point in a game only to be killed off by something that you had no way of predicting. Serious offenders with Death Trap problems are: *Barbarian* (Psygnosis), *Bounder*, *Jet Set Willy* and *Predator*.

COLLISION DETECTION

There are two main classes of poor collision detection – both causing those cries of 'he never touched me ref!' The first, and possibly least harmful, is the 'regular' class. The collision detection may be bad, but you can soon learn to live with it

and compensate for it. The worst cases are the games with 'irregular' collision detection. Here, the collision detection can be off to such a degree you can't compensate for it. Serious offenders for the first and second class respectively are: *Zynaps* on the Amstrad and *Screaming Wings* on the ST.

NO QUIT

You know what we mean – you've made a complete hash of a game and you realise you're better off restarting. But is there an option that lets you do this? Probably not, so you have to actively go and find some method of committing suicide. This can be terribly frustrating and we even gave away one of the worst offenders in this category – *Impossible Mission*. Can you ever forgive us?

TITLE SCREENS

The first thing you want to do when you load up a game is play the thing, yet it seems as if programmers sometimes actively seek to frustrate us with tediously long title screens and rolls of credits that you're forced to watch before you get to the game. It's not too bad if you can hit a key and bypass the credits, but if you have to sit through them every time – well, by the time you're allowed to play you could have lost all enthusiasm.

Serious offenders here are: *Out Run* (ST), *Barbarian* (Psygnosis), *Panzerdrome* and *Obliterator*.

NO PAUSE

There you are, just about to score your highest EVER score and you hear the doorbell go. Auntie Ethel had no way of knowing you were in the middle of a game, but you can bet she'll be the target for your frustrations once you get round to letting her in. Interruptions aren't usually such a problem for us here at ACE (although it can be when we're playing a game with no pause mode and the sandwich girl comes round), but what can really cheese a magazine off more than anything is a fantastic game that either has no pause mode, or else one that makes getting screen shots a nightmare by either altering the screen (blanking it out is particularly upsetting) or by plastering 'Game Paused' right across the action. The worst no-pause-mode offender is *Tetris* and the worst change-the-screen-when-paused offender is *Interceptor*.

HIGH-SCORE TABLES

Some games force you to enter your initials after every game - this is not so bad if you've done well, but some games have high-score tables so large you can get your name on them just by starting the game and letting yourself get killed! This is particularly bad when it doesn't save the score to disk so you have to go through the whole process every time, and believe us, putting your name up at the 150th position does nothing for your ego. The worst example of a far too large high-score table is *Crack*.

MULTI-LOADS

A nightmare, most of these. You're almost out of lives as you manage to reach the end of the second level. You sit back and wait for level three to load in and almost as soon as you start to play, you lose your last life. That immortal legend then appears on-screen 'Please rewind to the start of the tape'. You've got to go through the whole process again, and what's to guarantee you do better next time? Nothing! NAARGH! Serious offenders here are *Predator* and *Renegade*.

FLIES IN THE OINTMENT

Last, but by no means least, are the games that really sit back

and have a good laugh at you. You've played a game for hours, you've done extremely well, you've nearly finished some mammoth task and you suddenly realise the game won't let you finish it because you forgot to carry out some insignificant task right at the beginning. Or you've fought your way through hoards of pirates (yes, we're talking *Elite*) clustered around some anarchic planet, and after what seems like hours of concentrated effort, you're almost within range of a space station. Suddenly you hear that screech and realise you're being shot at - you make a run for the station and as you do so, a quiet message appears on the screen 'Docking computers destroyed'. Even if you reach the damn station alive you'll probably crash as you try to dock manually (survive the manoeuvre and you'll probably be pleased to learn that your precious cargo is cheaper here than it was where you bought it). NAARGH!

Serious offenders here are legion. In *A.T.F.*, for example, you're low on thrust and just about to land but putting the undercarriage down stalls the plane. Then there's *Get Dexter* - you do all that work and then find yourself in this weird final room where furniture drops on your head, not to mention the gory ceiling fan. And then there's *Mercenary* - get shot down far away from the city and it's a long, long walk to civilisation. Or you might be playing *Academy*, where you destroy hordes of vicious flying robot defenders in a magnificent running battle - only to find out the last shot took out your compass and there's no way you're ever going to find your way back to base. And what about *Deflektor*? There's just one sphere left, but can you find the right line to hit it before the energy runs out? Nope. Finally, there's always *How To Be A Complete Bastard*. If you log on to the computer in this game, the reset option you're given does just that - resets the machine, not just the game.

If you've ever had any of these things happen to you, then spare a thought for the poor soul who spent hours and a whole lot of money playing *SHADES*. Just before they became promoted to a wizard, some unfeeling person stabbed them in the back and sent them right back to novice level...



IT HURTS, BUT I LIKE IT

BATMAN

Ocean

Amstrad	£8.95cs	£14.95dk
Spectrum	£7.95cs	

Skillfully are we drawn in by this masterpiece of cunning, exploring and puzzling through the delightful isometric 3D screens. How cleverly we are lulled into a false sense of security by these pleasant surroundings. Then suddenly you burst through a door, confident you know what you're doing, and run slap bang into a bat power that takes away what jumps, speed or whatever other powers you did have.

Then of course there are the bat powers located in hard-to-get-at places, which after great effort to get them do absolutely nothing at all.

Most nerve twitching of all is the bit of the batmobile that's hidden from view - it could take you weeks to find it. By which time you'd kill for the solution.



Bounder

Batman

BOUNDER

Gremlin

Ten Great Games Compilation

Amstrad	£9.99cs, £14.99dk
Spectrum	£9.99cs, £14.99dk
C64	£9.99cs, £14.99dk

What an addictive nightmare this is. It's not just that it's frustrating, it's the fact that you can't stop playing it. The first problem is controlling the bouncing ball, which is like trying to manoeuvre a supertanker in a bathtub.

Then, as you merrily bounce off up the scrolling course, you go in the wrong direction and slap into a ball-bursting dead end. Not content with this the game may then put you back on a restart point where you've got no chance of surviving.

Just to cap it all are the unforeseen dangers and anti-bonuses that are so easy to hit, and you'll never know what hit you. Nurse, the screens...

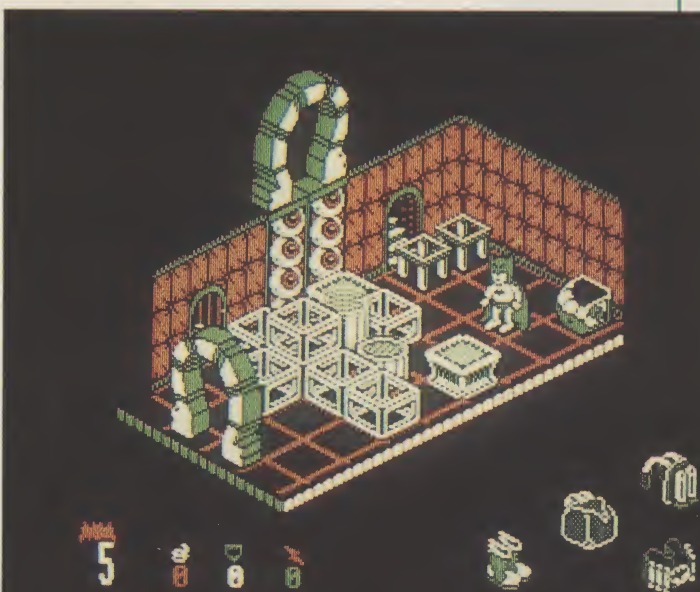
NEBULUS

Hewson

Amstrad	£9.99cs	£14.99dk
Spectrum	£7.95cs	
C64	£8.95cs	£12.95dk

Platform games have always had a frustration element, and this tower-turning variant is one of the best at it. The whole aim is to get to the top of the tower, and everything is trying to stop you.

Imagine the horror that



strikes your heart as you near the top of the tower, with time running out, knowing that one false move will send you tumbling a horrible distance back down again.

The puzzles and aliens can also have you chewing through your lip in mental agony. They have a knack of appearing just when it's most awkward for you, or putting a disappearing block where you least expect it.

You can easily spot *Nebulus* players because they eventually become resigned to these spirit-crushing disasters and adopt sad expressions, drooped heads and sloping shoulders. Then again, you should see them when they complete a tower – they would go down a treat on 'The Price is Right'.

TETRIS

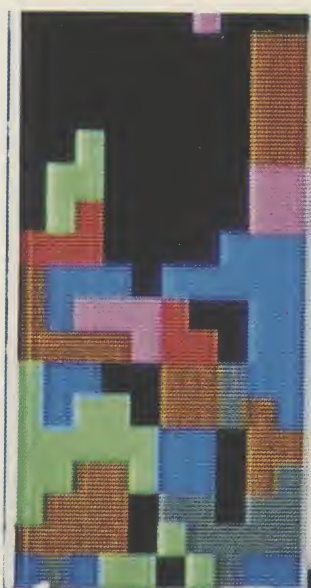
Mirrorsoft

Amstrad	£8.99cs	£12.99dk
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C64	£8.99cs	£12.99dk
Atari ST		£19.99dk
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Not a game that can be said to soothe the nerves. On most versions it would become a Newton's cradle type of device for calming the mind at about speeds 5 and 6, but it keeps on speeding up. Your brain starts to go into overload, the fingers fly at light speed, but all to no avail – you just can't win.

However much you persevere that smug computer is always going to win. Oh, the agonies of *Tetris* players as block

Nebulus



Tetris

Xor



Thrust

after block fails to fit into their carefully arranged pattern and builds ever nearer the top of the screen.

It's also a culprit of not having a pause mode, except on the C64 version. You can never get any sort of a break from the action and you'll walk away a mere shadow of your former self.

THRUST

Silverbird

Spectrum	1.99cs
Amstrad	£1.99cs
C64	£1.99cs
Atari ST	£9.99dk

Sensitive controls and big-league inertia are enough to make this one deep-down frustrating. You belt into a cavern, pour bullets into those gun-turrets and – having masterfully cleared the area out with a graceful arc of firepower – pile into the opposite wall because you're going too fast to stop. If that's not quite maddening enough for you, there are always the restart points to drive you bonkers. A special mention here goes to 'the cup', a structure

only found in the ST version, which forces you to haul the pod diagonally down out of its cave. Complete this monumental feat, crash your ship and the game puts you right back in the cup. Get a little further before you crash and it'll put you in a narrow tunnel below the cup, but with the pod balanced above you. Gnash your teeth in vain!

XOR

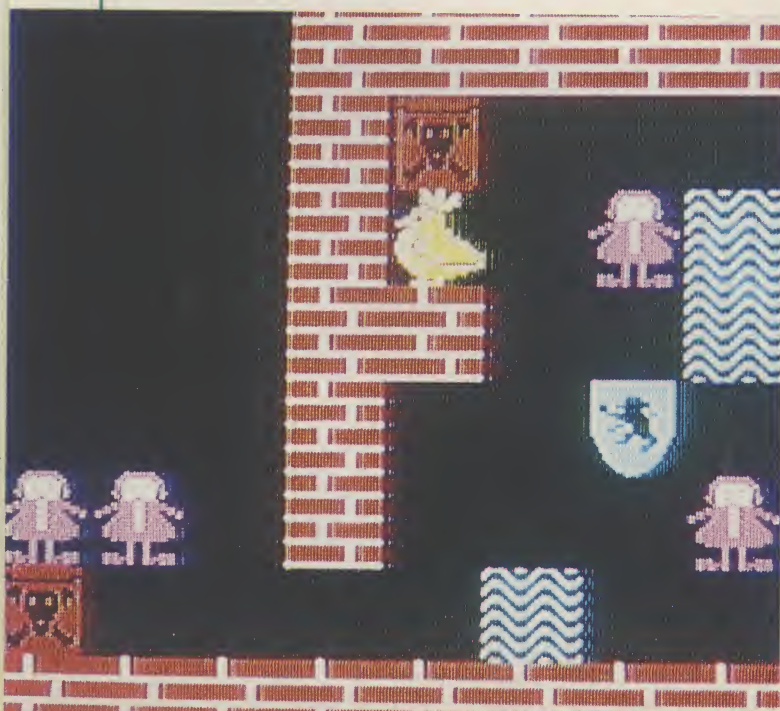
Logotron

Amstrad	£9.95cs	£14.95dk
Spectrum	£7.95cs	
C64	£9.95cs	£12.95dk

This game of maze puzzles with chicken, fish and explosions, is a classic for getting 'walled out' and it can happen at any time. The puzzles are constructed so that in nearly every case one wrong move can scupper the whole game. Of course your second shield might be able to get you out of trouble but you'll probably be too flustered to manage it.

The worst part about it is the speed with which events can happen. You decide on a move and put it into action, only to find the unstoppable sequence of events results in a fish penetrating your skull.

It's also a classic for the creeping feeling of 'Oh no, what have I done?' as it slowly dawns on you that you've blocked off an essential passage. It's absolutely devastating and makes you that much more determined to have another go and succeed.



Novice or Grand Master, choose the Ultimate in Chess Software - Sargon III

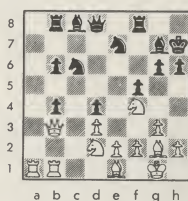
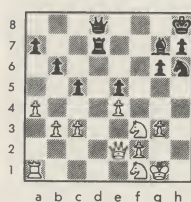
SARGON III



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Spectrum	£9.95cs	£14.95dk
C64	£9.95cs	£14.95dk

The worst culprit ever for appalling restart points. Most people probably haven't ever managed to get off the first stage without the aid of a poke or other cheat.

It's not just the restart points either. What makes it SO knee-clenchingly annoying is the fact that it's very demanding on the player as well. You've got to be near-perfect in your jeep as you jump wide chasms in bridges, blast other leaping jeeps and blaze away at helicopters bearing airborne death. After battling through screen after screen of that and eventually succumbing, guess where you'll end up? Back at the \$#@%*! start.

BARBARIAN

Psygnosis

Atari ST	24.95dk
Amiga	24.95dk

Not to be confused with Palace's identically named title – frustrating only because it's so easy to complete – this 16-bitter revolves around unforeseeable death. The only way to learn which bits of the scenery crush you, collapse under you or burst open and unleash heavily-armed nasties at you is to let them do their worst. Next time you'll know better of course, but that hardly goes easy on the old blood pressure. Couple these with a hero who obeys your commands sluggishly if at all, a game system that seems to load every screen separately from disk and a fake bow and arrow designed to lead you astray, and you're in for anger on a telly-smashing scale.

ECO

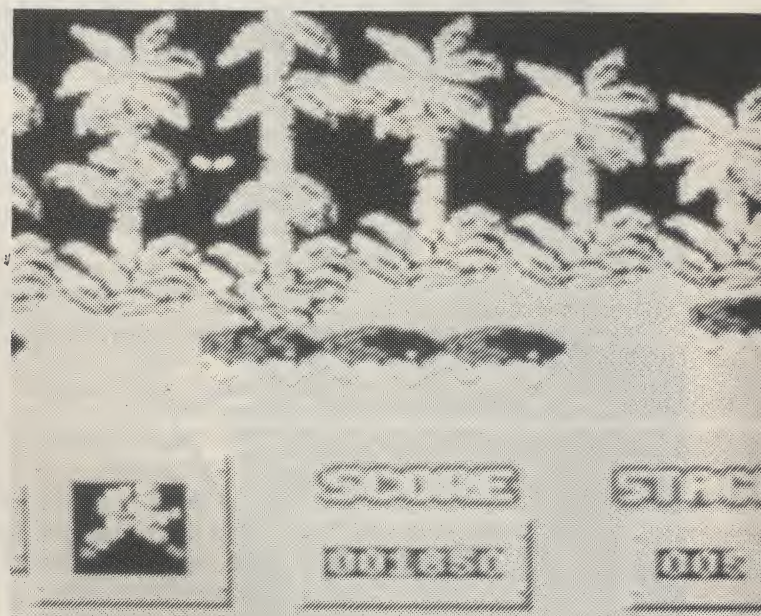
Ocean

Atari ST	£19.95dk
Amiga	£24.95dk

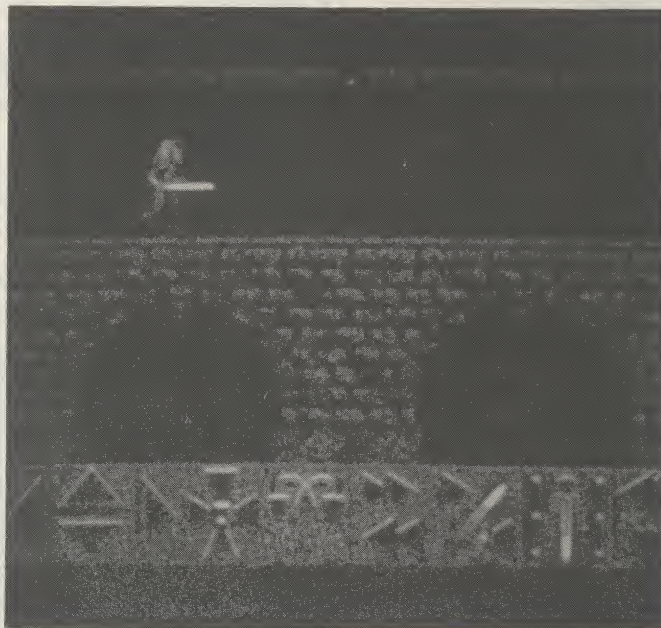
A unique case, this, in inspiring

the player to new heights of anguish. A game that looks flawless in its conception, where you try to modify a simple insect into ever higher life forms. A game with stylish, attractive graphics. A game with eating, sex and death. With that recipe, surely a game to inspire paroxysms of delight?

Nope. The whole problem is that you start with high hopes of a great experience and spend minutes, hours and days trying to find the game. The sad truth is it isn't there – and is it ever frustrating going through all that just to be let down.



Army moves



Barbarian

PREDATOR

Activision

Spectrum	£9.99cs	
Amstrad	£9.99cs	£14.99dk
C64	£9.99cs	£14.99dk
Atari ST		£14.99dk

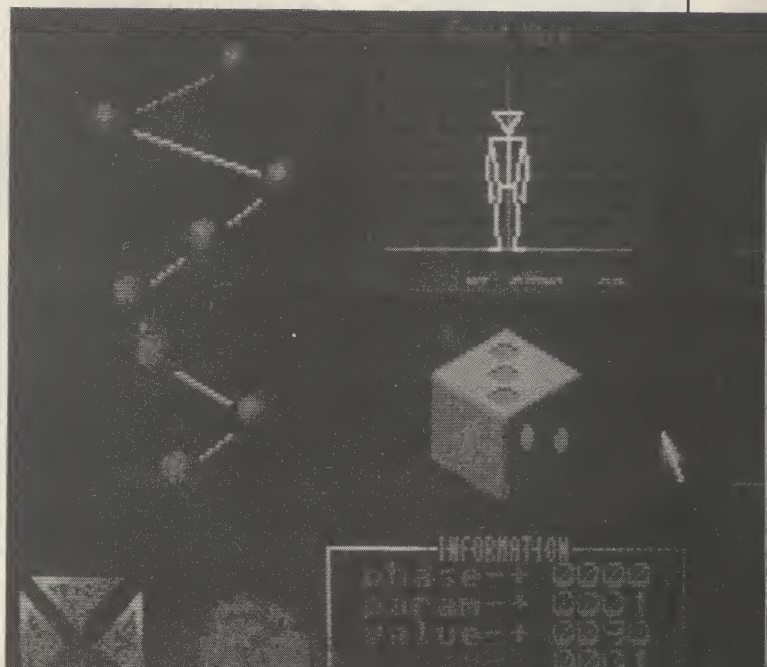
Any game that gives you more than ten lives (or their equivalent) should put you on your guard for frustratingly unavoidable deaths, and here's a case in point. When it comes to attrition gameplay, this Schwarzenegg-em-up comes out tops every time. Ploughing through a hostile jungle you might expect to take hits from snipers, but would Arnold really get killed by bats? And would he really (in films

Predator



rather than real life) be faced with enemy firepower he couldn't help getting wounded by? Being ground down without actually making mistakes to deserve it is just too frustrating for words but, if your blood's still a bit below boiling point, why not check out the extra weapons? You can pick up anything from a machine pistol to a 6,000 rounds per minute mini-gun but your fire rate stays infuriatingly constant. Sounds like a bit of a raw deal, hmmm?

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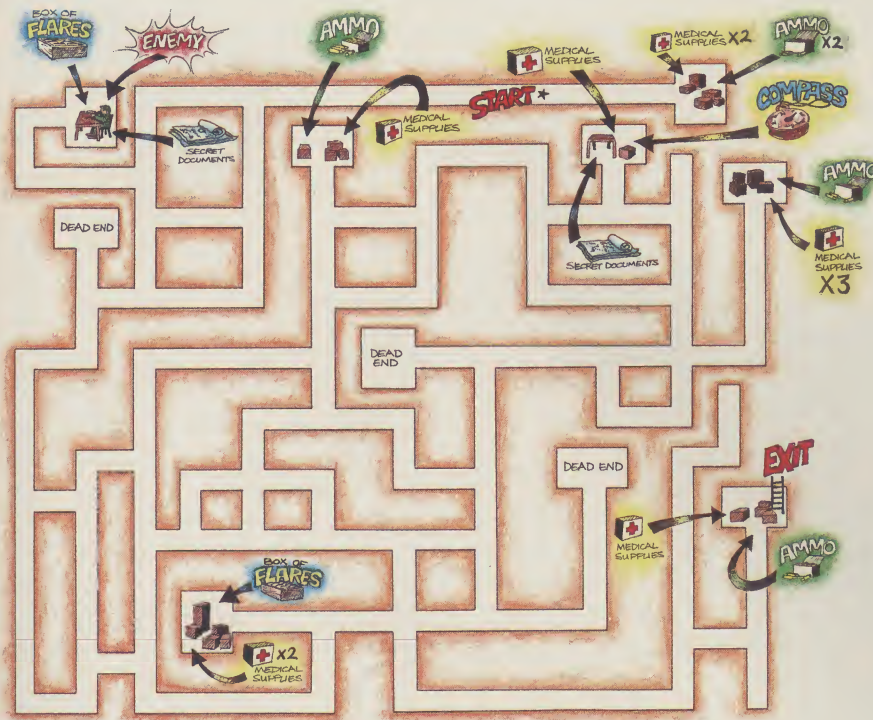
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PLATOON MAPPED (PART 3)

Ian Thompson supplies the third section of the combat zone.



Those juicy tips and pokes just keep rolling in – if a particular game's driving you up the wall, here's the place to look for a tip that could make your life a whole lot easier. Do you want to crack *Impossible mission*? Would you like to complete *Dan Dare II*?

Or make it to the end of stage 5 in *Out Run*? If you can hack your way through other people's code or produce a map that could prove invaluable to others who are lost, then don't hesitate to send your contributions in – for the best tips, maps and pokes each month we give software away like it was going out of fashion.

SAMURAI WARRIOR

Bushido Bunny loving C64'ers can make life a lot easier for themselves by typing in the following.

First load the game and reset the C64. now try these pokes:

POKE 15502,(0-127) for higher starting energy
POKE 15507,(0-127) for more money
POKE 14652,(0-3) to start on a higher level.

For unlimited energy, type this lot in:
POKE 20385,32:POKE 20386,245:POKE
20387,207:POKE 53237,157:POKE
53238,20:POKE 53239,39:POKE
53240,169:POKE 53241,9:POKE
53242,141:POKE 53243,20:POKE
53244,39:POKE 53245,96

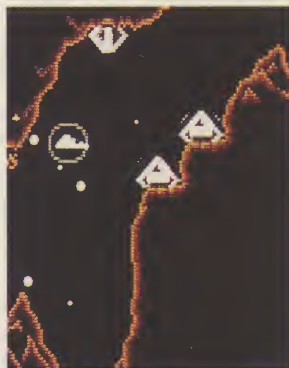
Type SYS 14336 to restart the game

ANDRE VAN DER ELST, Rotterdam

OIDS

Mirrorsoft's ACE rated *Thrust-ish* blast is straightforward enough, but here's a couple of points you may have missed.

1. After refuelling at a fuel base, fire into the air before lifting off. If the refuelling pipe comes out again then the dump still has some fuel in it. If the pipe doesn't re-emerge then the dump's empty and can be shot for an extra 100 points.



2. When going through teleports, fly slowly and activate your shield just as you touch the teleporter – this reduces the risk of impacting your ship on the sides of a small cavern.

3. When creating new planetoids, if you require a more powerful installation such as a stronger attractor or repulsor or a rapid-fire gun turret then simply place two or more of the same object in the same position, (each hit during the game destroys one of them.)

STEVEN BAINES, Cottingham



DAN DARE II

Here's a complete solution to Virgin's treen-em-up on the Spectrum.

1 LEFT, DOWN, D, L, L, L, UP, RIGHT, U, U, L, L, D, L, D, SHOOT COMPUTER, R, R, D, D, SHOOT SUPERTREEN, U, R, R, R, D, SHOOT SUPERTREEN, D, SHOOT SUPERTREENS, D, R, PICK UP EXTRA ENERGY, L, D, WAIT FOR CRUSHER TO CRUSH TWICE, DOWN INTO CRUSHER, L, SHOOT SUPERTREEN, D, L, D, SHOOT SUPERTREEN, D, L, L, U, R, U, U, L, L, D, R, SHOOT BLAST DOORS, ENTER, WAIT FOR DOORS TO CLOSE – FINISHED.

2 R, R, D, L, D, D, L, SHOOT COMPUTER AND SUPERTREEN, D, LOSE A LIFE, GET EXTRA FIREPOWER, D, D, D, D, SHOOT SUPERTREEN, L, L, L, SHOOT SUPERTREENS, R, R, R, U, U, R, D, D, SHOOT SUPERTREEN, D, L, SHOOT SUPERTREENS, R, U, U, R, D, D, R, GET RADIO FROM BEHIND DOOR, U, SHOOT SUPERTREEN, D, L, L, U, U, U, R, D, R, D, R, GET BEHIND BLAST DOOR – FINISHED.

3 R, U, U, U, R, R, D, SHOOT COMPUTER, U, L, L, U, L, REPLENISH ENERGY, R, U, R, THROUGH FAKE BLAST DOORS, L, D, L, REPLENISH ENERGY, R, D, D, L, SHOOT SUPERTREEN, D, L, U, L, D, L, SHOOT SUPERTREENS, U, L, L, SHOOT SUPERTREEN, R, U, COLLECT SCREEN FROM BEHIND DOOR, D, R, R, D, D, U, R, U, R, R, GET BEHIND BLAST DOOR, FINISHED.

4 R, R, R, R, U, R, GET EXTRA ENERGY, L, U, U, R, R, U, R, D, R, U, U, U, L, SHOOT COMPUTER AND SUPERTREEN, R, D, D, D, L, SHOOT SUPERTREEN, U, U, SHOOT SUPERTREEN, D, L, L, SHOOT SUPERTREEN, R, D, D, L, D, L, SHOOT SUPERTREEN, R, D, D, D, D, SHOOT SUPERTREEN, D, D, L, SHOOT SUPERTREEN, R, U, U, U, U, L, L, D, L, GET TREEN DISGUISE, R, R, D, SHOOT SUPERTREENS, U, U, R, U, U, U, R, R, U, U, R, D, R, U, R, R, R, R, U, R, GET IN ESCAPE POD, WAIT FOR TIMER TO REACH ZERO – GAME COMPLETE.

JONATHAN BARLOW, Southampton

MERCENARY – THE SECOND CITY

Here's a neat tip to allow Amiga-owning *Mercenary* fans access to the author's cheat room where you'll get keys to every door, passes out of prison and the ability to carry oodles of goodies in your pockets!

Fly the dominion dart as usual, fly to above 350 meters, level off (your speed should be 1,781 kph) and fire a missile. Pick the missile up once you get close to it and then land. Go to 08 08, take the crashed intergalactic craft and go to 08 06, go underground, exit your ship and walk through the triangular door – bingo!

SIMON LAW, Crediton

IMPOSSIBLE MISSION (C64)

How could we resist publishing a poke for such a good game? (especially as we gave it away free on the cover of our American Issue).

Enter and RUN this short listing before loading the game and you'll find the sprite collision detection has been disabled (the robot's can't kill you).

```
1 FOR X= 320 TO 347:READY:C=C+Y:POKE X,Y:NEXT
2 IF C=2941 THEN POKE 157,128:SYS 320
3 PRINT "DATA ERROR"
4 DATA 32,104,225,169,83,141,243,3,169,1
5 DATA 141,244,3,76,13,8,72,77,80,169
6 DATA 96,141,16,120,32,132,255,96
```

THE MASTER HACKER, Holywell

CARRIER COMMAND

A handy tip to find the enemy carrier.

Start an action game and set course for Isolus (just east of Thermopylae). Stay just out of range for approximately 10 minutes. As soon as the message 'Isolus is now an enemy island' appears, launch a Manta and fly towards the north side of the island. The enemy carrier will be directly ahead of you.



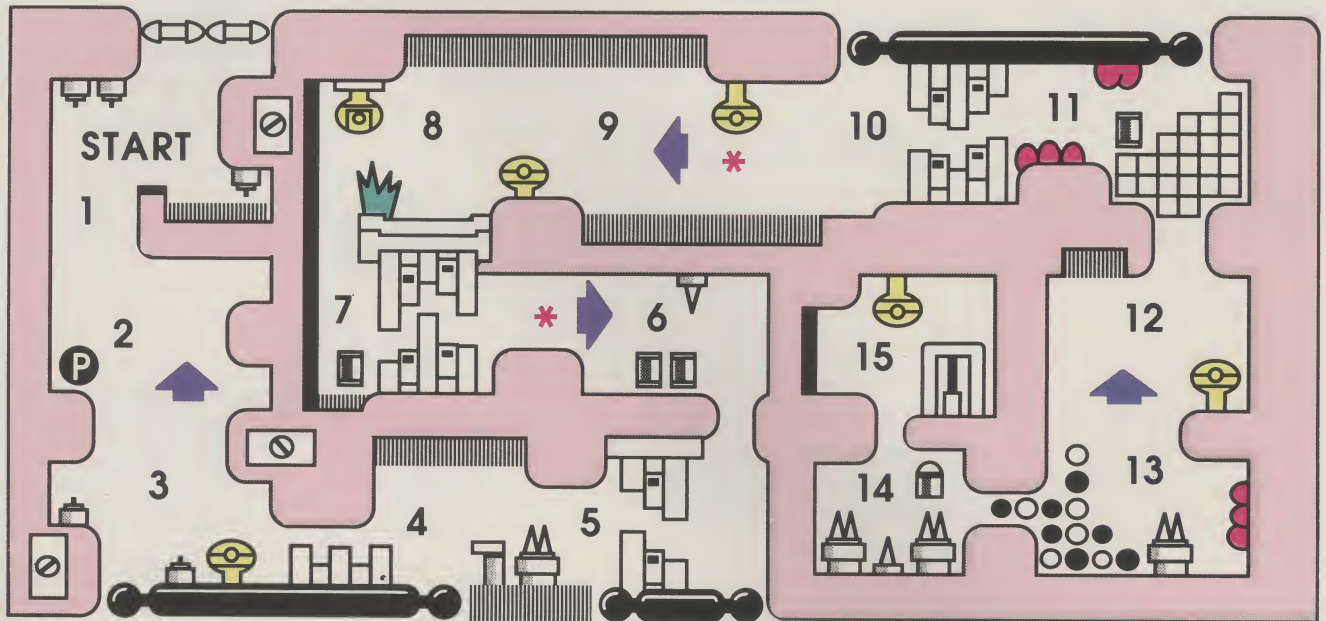
When you're arming a Walrus, try loading it up with both missiles and a laser (plus whatever you wish to carry in the rear compartment).












STUART MAY, Walton on Thames

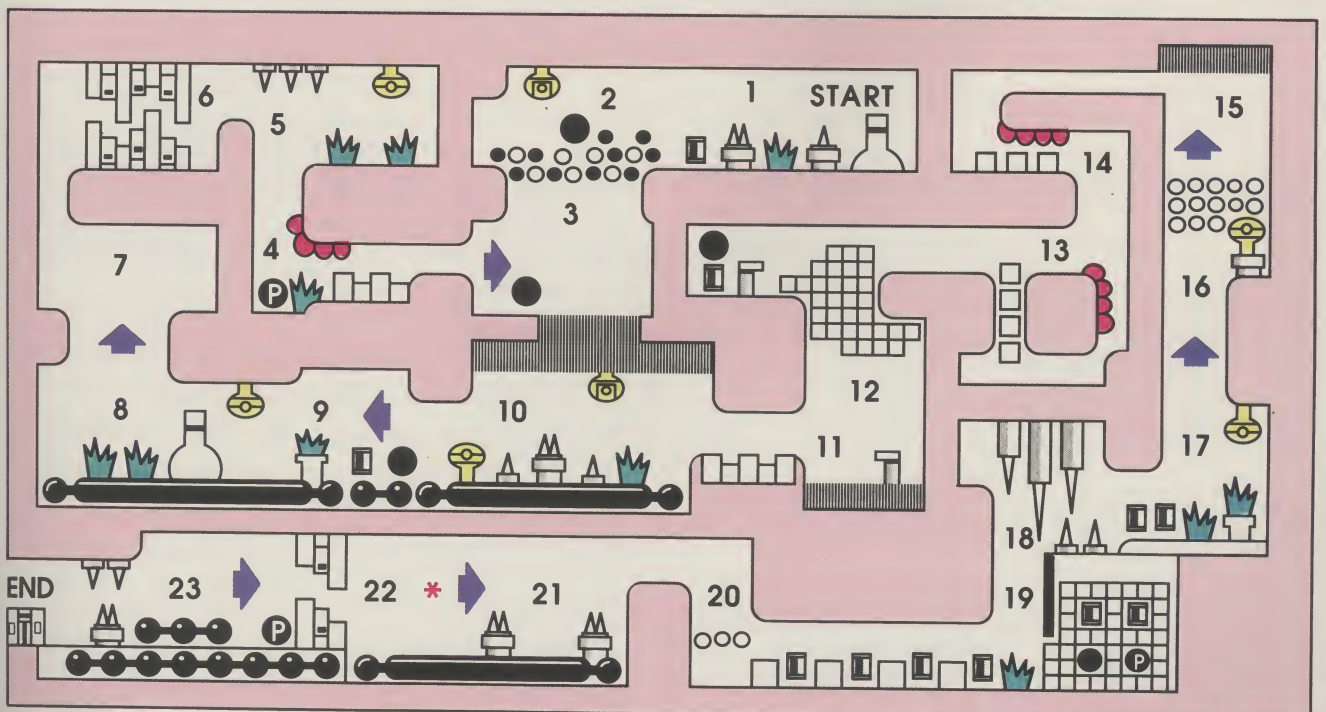
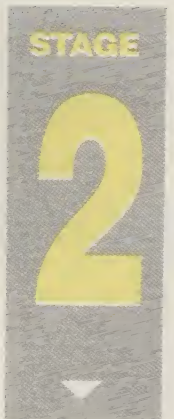


CYBERNOID MAPPED

BRUCE ROBERTSON, Stevenage



-  GUN
-  MAIN CARGO PICK UP POINT
-  DRONE
-  CANNISTER
-  MISSILE LAUNCHER
-  BLOCKS
-  CATERPILLAR
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-  REAR GUN ADD ON
-  MOVING ALIENS
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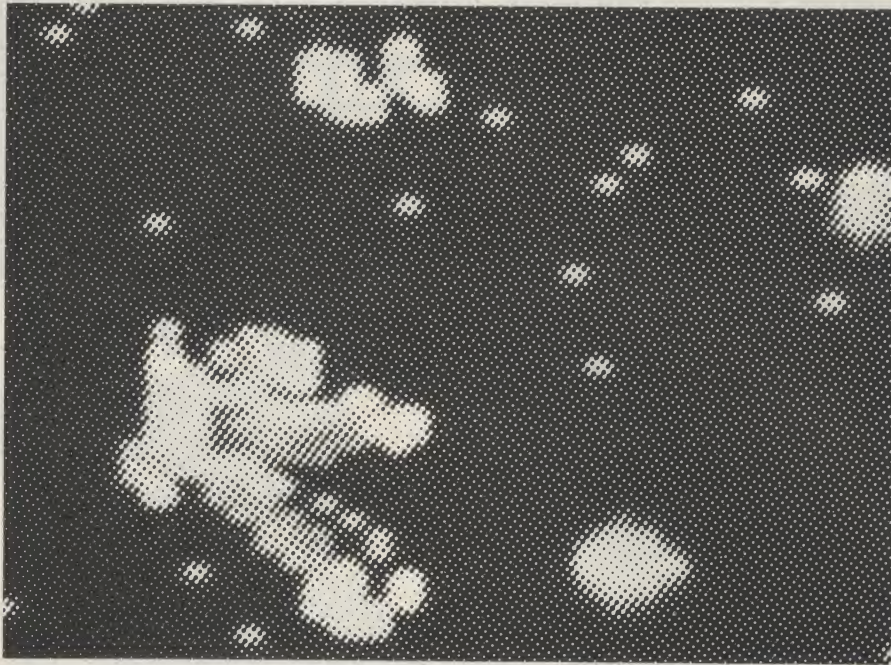
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ZYBEX

An infinite lives poke for the C64. Simply type in the listing and RUN it.

```
100 DATA 32,86,245,169,78
110 DATA 141,200,2,169,1
120 DATA 141,201,2,96,169
130 DATA 91,141,121,4,169
140 DATA 1,141,122,4,76
150 DATA 0,4,169,189,141
160 DATA 106,113,76,0,96
170 FOR L=320 TO 354
180 READ A:POKE L,A:NEXT
190 POKE 157,128:SYS320
```

NEIL WHITFIELD, Washington, Tyne and Wear



OUTRUN

ST owners not only get the best version of the game to date, but some handy tips too.

Type in STARION whilst playing the game then select any of the following codes:

B - Gives extended play
Q - Gives you some information about the program
T - Adds ten seconds to your time
S - Takes you through the locations
D - saves the screen in DEGAS format
x - crashes the computer!

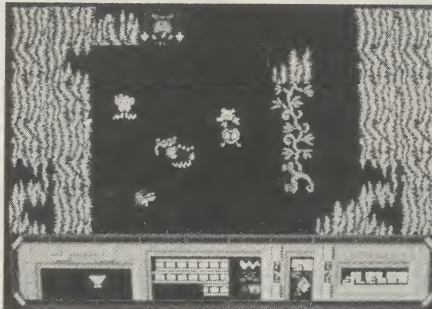
MARTYN CARR, Woking

STARQUAKE

It may be old on 8-bit machines but ST'ers have only recently been able to join in the fun. These codes will help you if your having problems with the Teleporters.

```
TABET HINDI KWANG ROKEA SOLUN CWORE
KALED DAVRO BORNO TSOIN FLIED NICH
LUANG CHING SOCHI
```

SIMON JAGGS, Birmingham

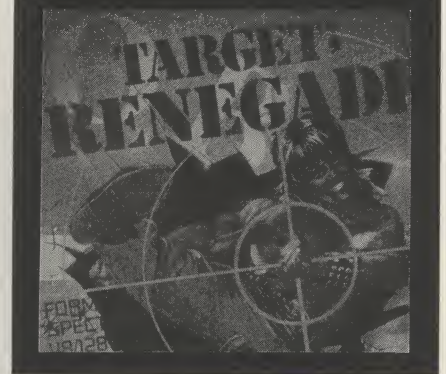


TARGET;RENEGADE

This tip should prove valuable to Spectrum owners who are finding the game a little tough for them.

Play the game until you have enough points to register your name on the hi-score table. When entering your name, hold down CAPS SHIFT and press BREAK, enter a line and a half of characters and then press enter. Let the game count down and then continue to play with infinite lives (the game screen will be corrupted for a short while but it will clear itself).

DARREN BARTLETT, Hayes



NORTHSTAR

Spectrum owners need worry no longer as this infinite lives poke will solve your problems.

```
30 LOAD""CODE
40 FOR N= 65448 TO 65455
50 READ D
60 POKE N,D
70 NEXT N
80 RANDOMIZE USR 65428
90 DATA 62,36,50,243,188,195,191,183
100 REM INFINITE LIVES
```

JAMES TOUGH, Aberdeen

SOFTWARE GALORE!!

Not many of us can afford to splash out on all the software we'd like, so what's the next best thing? Sending some meaty maps, tips or pokes to ACE. You never know, you could walk away with up to SIX top-rated games for your micro if your tip's picked to be 'Tip of the Month'. Bruce Robertson's laughing all the way to the bank now that he doesn't have to splash out on copies of *Dark Side*, *Target;Renegade*, *Earthlight*, *Action Force II*, *Venom Strikes Back* and *Beyond the Ice Palace* for his Spectrum. Why? Because he'll shortly be receiving all of them from us! Andre van der Elst will soon be grinning over his copy of *Bionic Commandos* as will 'The Master Hacker'. Darren Bartlett's going to be chuffed when his copy of *Dark Side* pops through his door as will Stuart May when he gets to grips with *Leatherneck*. Martyn Carr's in for a real treat once he gets started on *Dungeon Master* though. There's nothing stopping you from winning a juicy prize either, so get those pens moving and send those red-hot tips to:

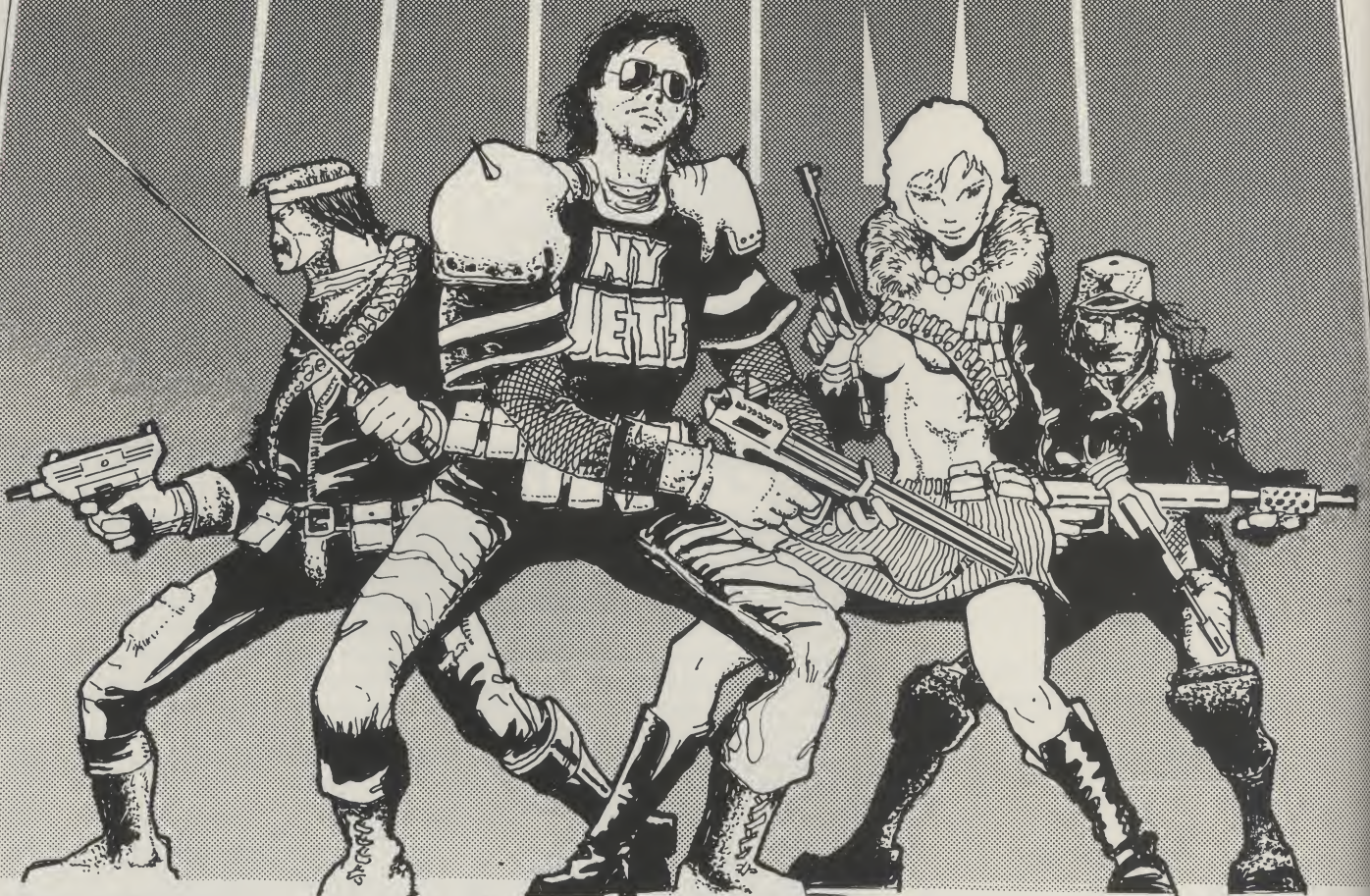
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Tony Ross gets his teeth into two newcomers this month – both from Jade Games. *New Order*'s an American import, run over here under license while *Chronicles* are British through and through...

NEW ORDER

Jade Games

No, there's no connection with that pop group from Manchester. This is a game featuring star-ship fleets sweeping through space, attacking, destroying or colonising star systems. Set in a 30 x 20 x 15 chunk of space, up to 30 players engage in empire building by occupying and controlling many of the 700 planets scattered throughout 200 star systems.

There is a great deal of detail in *New Order*, with seven different attributes for space ships and ten ship types. I think the six pages of glossary and two pages explaining abbreviations give a good guide to the complexity of the game.

Victory is achieved by building, controlling, claiming or destroying colonies. Points are awarded according to the type of player you are, and the first to score approximately 1800-2200 (2000 +/- 10%) is the winner.

Unusually for an American-designed

CHRONICLES

Jade Games

In the last year or two, several computer moderated fantasy games have appeared, and these now present a credible alternative to the older, human-run, games. Jade has brought out not one, but two such games or rather two versions, the 100-player *Chronicles of the Knights of Avalon* and the 500-player *Chronicles of King's*.

I found the rulebooks brief and a bit vague about the player's role in the game. So far as I can tell, each player starts as the ruler of a province with five armies at his command. Each province is 50 miles square and there are four empty provinces for every player in the game.

Through conquest, settlement, trade and diplomacy, players expand their provinces and rise in rank from a lowly Squire (in charge of five armies??) up to Emperor. Along the way, players can form banks and even their own religions with the help of other players. The rank increases do not depend on province conquest but on 'experience points' gained from successful actions like this – it encourages less violent strategies.

So what does it cost? Well its free to start and turns cost a cheap 80p for the first seven orders. Sounds good, but extra orders cost 12p each so a 10-order turn would be £1.16. After turn five there is an advanced rulebook which costs £1.00, and this gives extra information and orders. I believe this book is the same for both games.

The two games are set in different areas of Avalon and the major difference, other than the number of the players, is the lack of an internal mail system in the larger game. The only way to diplomate in this game is to write directly to those players whose address you receive when you meet them.

Each rulebook has a copy of the map in the centre and A1 size (huge!) copies are available from Jade. You can fill half a bedroom wall with these. They are only black and white, but well-drawn, and they make mapping easier. Perhaps Jade would consider producing A1 size gridded tracing paper to go with the maps.

PLAY IT... BY MAIL

From reading the detailed 68-page rulebook the impression is of a complex but well thought out game. There are some features which seem derived from other games, most notably the player types (Imperialist, Xenophobe, Pioneer and Crusader) which may seem familiar to players of *Starweb*, the first space PBM game.

There is little new in the plot of *New Order* that hasn't been done before. Space games tend to have similar features. As usual, some form of hyperspace jump system is employed, otherwise the game would be very difficult to stage while remaining realistic.

game, there is only one price for turns. It is however £2.50, which I consider expensive for a computer moderated game. Given the complexity of the game, though, I am nearly prepared to accept that the price is justified. It also costs £2.00 to start a game and the rulebook costs £3.00. The ACE rating is lower because of the cost, which might exclude many younger players.

COMPLEXITY 9 ENJOYMENT 5
PRESENTATION 7 SKILL 8
ACE RATING 6

SPECIAL DELIVERY

Crasimoff's World has been taken over by Crasiworld and is now run entirely by GM Andy Smith (not of ACE!) from the new address below. Former GM Mark Dulsion likes the post office so much, that he now works for them, delivering post instead of creating it!

The new address for Crasimoff is 4 Crescent Avenue, Cleveleys, Blackpool, FY5 3JE. I haven't seen anything of this game yet, though I know its one of the oldest UK fantasy campaigns and was originally run by KJC. I believe it is undergoing revisions following the take-over.

Still with KJC (come on some of you others, tell

me what's happening!). *Troll's Bottom*, mentioned in the June ACE, has now got over 2,100 players, with 30 games started. Our ACE reviewer isn't doing too well and should be reporting next issue.

I've received several letters, including some from editors of Fanzines. These are amateur magazines dedicated to providing extra information about pbm games, along with poetry, letters, fiction and general things. I hope to cover some in a future issue, so if you write one, drop me a copy.

Until next time, may all your orders arrive safely.

COMPLEXITY 7 ENJOYMENT 7
PRESENTATION 7 SKILL 6
ACE RATING 8

COMPANY ADDRESSES

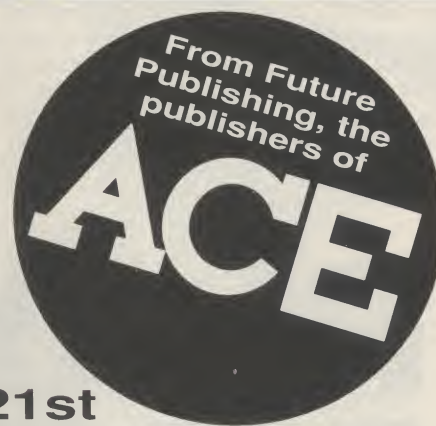
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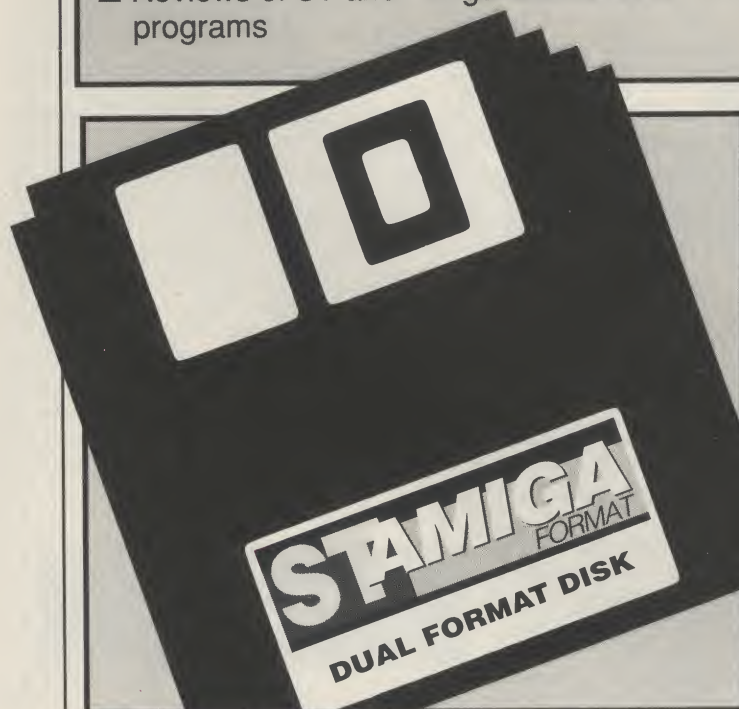
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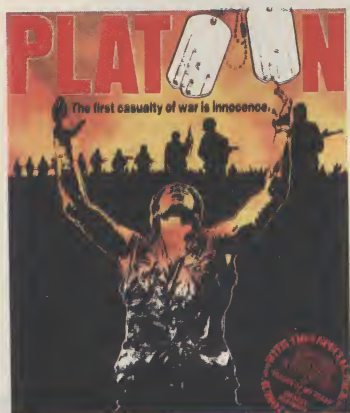
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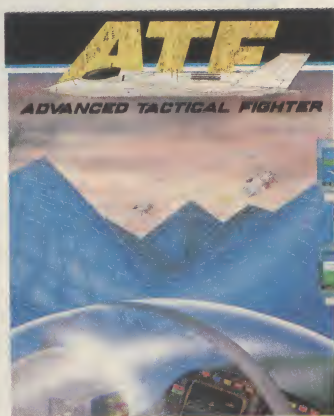
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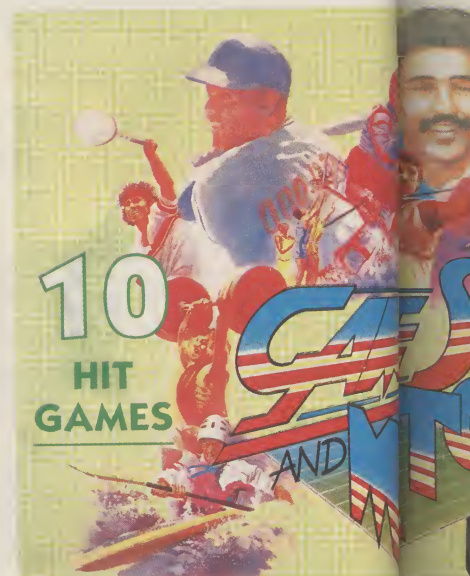
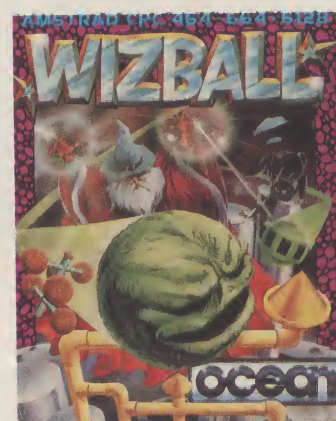
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Wizball.....	19.95	15.95	AC109ST
California Games.....	19.99	15.95	AC135ST
Leaderboard.....	24.99	19.95	AC107ST
UMS.....	24.95	19.95	AC140ST





● AMIGA TITLES

(In addition to those elsewhere)

Jinks is an incredible addictive bounce-em-up, **World Games** is the Epyx sports classic, **Hardball** is a great baseball simulation, **Leaderboard** the definitive golf simulation, **Interceptor** is a superb combat flight-sim.

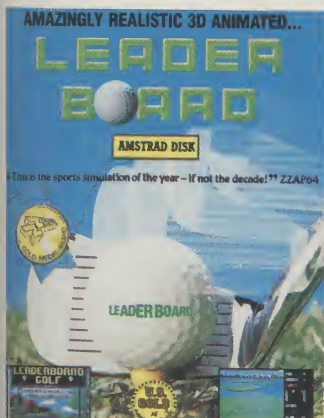
Title	RRP	ACE price	Order code
Jinks	24.99	19.95	AC155AM
World Games.....	24.99	19.95	AC108AM
Leaderboard	24.99	19.95	AC107AM
Hardball	24.99	19.95	AC152AM
Jinxter	24.95	19.95	AC139AM
Wizball	24.99	19.95	AC109AM
Interceptor	24.99	19.95	AC160AM

● IBM PC TITLES

(In addition to those elsewhere)

These leading games should also run on Amstrad PCs and other compatibles. **Elite** is the definitive space trading and combat game, **Tomahawk** is a sophisticated flight simulator, **Hardball** a great baseball simulation, **World Class Leaderboard** the definitive golf simulation, **Jinxter** is an adventure, **UMS** a wargame, **Tetris** an addictive puzzle

Title	RRP	ACE price	Order code
Elite.....	24.95	19.95	AC105PC
Tomahawk.....	24.95	19.95	AC150PC
California Games.....	19.99	15.95	AC135PC
World Leaderb'd.....	24.99	19.95	AC151PC
Hardball	24.99	19.95	AC152PC
Jinxter	24.95	19.95	AC139PC
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No-one wants to spend more money than necessary in setting up a decent home music studio. Inevitably, though, you'll want more than one MIDI synthesiser or sampler – maybe even three or four. The problem is that at around £1000 for a decent full-sized keyboard, many of us can't even afford one!

A computer-based system which can handle your sequencing, patch editing, and even functions such as scorewriting, is part of the solution. Obviously, you could also save money by avoiding unnecessary duplication of equipment, and the magic of MIDI can make one of the most expensive, bulky parts of a synth – the keyboard itself – redundant. Increasingly, the best way to save money and space is to forget the idea of buying multiple keyboards, and invest instead in a single controlling 'master' or 'mother' keyboard, and several keyboardless MIDI sound modules.

That's the theory. In practice, though, the UK market for master keyboards has been slow to take off. The first Japanese products from Korg, Yamaha and Roland were too pricey to make any impression, and it's only with the advent of Cheetah's MK series keyboards that the idea has become practical to musicians on a reasonable budget.

Most of you will know that Cheetah started off in the home computer market, and broke into music through the popular SpecDrum digital drum machine add-on for the Sinclair computers. Now the Cheetah music range includes MIDI keyboards, drum machines, sequencers, drum kits and synthesisers.

The keyboards are particularly impressive, because they are such amazingly good value for money compared to Japanese and American competitors. In fact, the most expensive Cheetah keyboard now costs less than the cheapest from rival manufacturers!

WOSSITDO?

What exactly is a master keyboard used for? Put simply, it produces no sounds, but generates MIDI signals which control sound-producing keyboardless modules. These signals include pitches, performance features like pitch bend and vibrato, and patch change instructions which tell the 'slave' synth which sound to play.

Practically every new synthesiser produced now appears in a cheaper keyboardless modular form too; for instance the Yamaha DX11 and the TX11 and the TX81Z module, the Roland D10 and D110 module, and the Ensoniq Mirage sampler and Mirage M module. Some units, such as the popular Akai S900 sampler, are only available in modular form. By setting each module to respond to a different MIDI channel, a single master keyboard can control sixteen or more synths.

Of course, you also need a good keyboard if you're programming a sequencer. Many synths, even fairly expensive ones, have relatively poor keyboards which soon become tiring to play, so it makes sense to invest in one good master keyboard instead.

BUDGET IVORY

A master keyboard can enable you to control a host of MIDI-compatible systems, from synthesiser modules to drum machines. Up till now, however, they've been priced out of the range of all but the enthusiastic professional. CHRIS JENKINS looks at Cheetah's latest range – expensive it isn't...

THE GOODS

Cheetah's basic keyboard is the MK5, discontinued, but still available. This £99 unit is the absolute minimum you'll need to control a synth module. It features five octaves of full-size keys, a pitch bend wheel, and buttons to change the sound program, or 'patch' of the synth module you're controlling. It doesn't have velocity response, so it won't play louder if you hit it harder; it doesn't have aftertouch, so it won't bring in a performance effect if you press the keys down; and it doesn't have a modulation wheel, so you can't introduce, say, a vibrato as you play. But it is cheap, and – remember – it works with any MIDI synth module, from the cheapest to the most expensive.

The MK5's slightly enhanced replacement, the MK5II, costs £199. More interesting is the next model up – the more professional £275 MK5V. As you'll guess from the name, its main extra is Velocity sensitivity. If your synth module is velocity responsive, hit the

MK5V harder and it will play louder, or brighter, or however you have programmed the synth to respond. This feature is a must if you want to develop any real playing technique.

The Steel-cased MK5V also features pitch bend and modulation wheels, and a more professional 'bank/patch' control pad. This allows you to select the sound you want from the slave module by pressing one control key for the 'section' (A or B), one for one 'bank' (1 to 8) and another for the 'patch' (again, 1 to 8). This gives a total of 128 selectable patches, and most new synths will respond happily to this arrangement.

Three dedicated keys control the MIDI channel on which you're playing, move the playing pitch up or down an octave (giving an effective range of seven octaves), and put the keyboard in patch select mode. A two-digit red LED display keeps you in touch with what's going on. The MK5V is fully polyphonic, so your synth module will play hap-

pily whether it has six, eight, ten or more voices. The one thing you can't do is change the velocity response to suit your playing style; if you want this feature, you have to go for the top-of-the-range MK7VA.

HIT THE HIGH NOTES

The MK7VA is an amazing bargain at £399. If you think that's expensive, bear in mind that the cheapest rival seven-octave full size keyboard, the Italian Elka MK88, costs £1029!

The Cheetah MK7VA doesn't have some of the complex features of the Elka, but it's pretty stunning nonetheless. The seven-octave full-size keyboard has a weighted action, and responds to velocity, aftertouch, and release velocity. It can be split into four separate playing 'zones', each of which can be assigned its own MIDI channel, synth patch number, MIDI effect controller type, pitch bend and modulation response, upper and lower note limit, MIDI OUT socket (there are four, one for each zone) and so on.

There are also overall parameters for velocity response (1 to 999), default pitch, type of footswitch controller, and so on. All this information can be saved in one of eight on-board memories, and recalled at any time. While many of the control buttons serve several functions, there are dedicated buttons to switch the zones on and off and to switch on the sustain function of each zone. The MK7VA also features MIDI IN and THRU sockets, and a MIDI MERGE function, so you can play the keyboard while the sequencer is playing your modules through it. This means that you don't have to spend money on a 'MIDI merge box'.

CREAM OF THE CROP

If money's no object, you could spend as much as £1500+ VAT on a master keyboard such as the Kurzweil Midiboard, a wooden, weighted 88-note instrument designed for players brought up on Steinway grand pianos.

The most advanced master keyboard, though, is the Elka MK88 at £1029. Features include seven octaves of weighted keys, six playing zones, 64 on-board memories on cartridge, seven programmable MIDI controller sliders and switches, four MIDI out sockets, and a clock facility for driving an external drum machine or sequencer.

The Elka MK88 and MK55 – luxury for a grand plus...



1. Cheetah's MK7VA offers a stunning specification for the price. It may not look as sexy as the Elka units pictured elsewhere on this page, but that doesn't seem so important when you realise it only costs £399.



2.The MK5V - velocity sensitive keys plus modulation and pitch-bend wheels - a host of features for £275.

One particularly welcome facility is the MK7VA's ability to display the velocity at which you are hitting the keys. No more surprises when you play back a sequence and find it twice as loud as you thought you'd played it!

So what kind of effects can you achieve with a keyboard as powerful as the MK7VA? You could program two synths to respond to the whole keyboard range, but with different velocity responses so that as you play harder the sound fades in under the first. You could then switch to a program in which the keyboard is split in half, so that the lower half plays string chords while the top half plays a lead synth sound. For a finale, try setting up a program which puts a kit of sampled drums on one octave of the keyboard, synth bass on another, brass stabs on two more and a saxophone sound on the top three.

LA LORE

The latest synth module ideal for use with a MIDI master keyboard is the Roland D110. It is a professional version of the MT32, reviewed in ACE issue 3.

Like MT32, the D110 uses 'linear arithmetic synthesis'. This is a combination of sampled 'attack' sounds and synthesised 'sustained' sounds which give incredibly powerful and realistic results. It has a built-in digital reverb, a selection of sampled drum sounds, and it's multi-timbral, so it can play up to eight sounds at a time under keyboard or computer control.

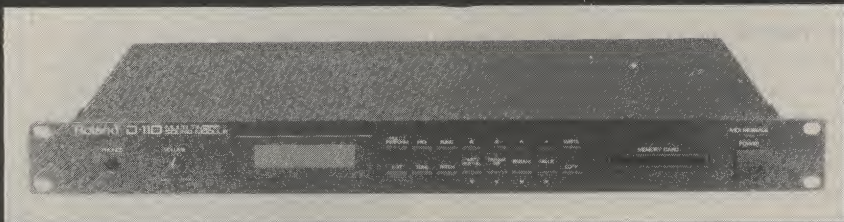
Unlike the MT32, the D110 fits in a standard 19-inch studio rack: has six sound outputs for separate mixing and effects, rather than just two; has a slot for plugging in sound memory cards; and you can edit the sounds from the front panel or an optional hardware programming box, rather than having to buy a software editing package as you can edit the sounds from the front panel or an optional hardware programming box, rather than having to buy a software editing package as you do with the MT32.

There are 128 preset sounds and 64 programmable, and the D110 has some astonishing built-in demo tunes, too. Check out the manic version of Flight of the Bumble Bee, the incredible drum solo in the jazz demo, and the realistic Jamaican reggae demo.

RRP is a very reasonable £586, so the D110 is an ideal complement to any computer-based sequencing system.



Roland UK, Amalgamated Drive, West Cross Centre, Brentford, Middlesex, TW8 9DN



Roland's D110 synth module uses the same system as the incredible D50 and the multi-timbral MT32.

Cheetah's future plans for the music market include the MS6 synth module, ideal for use with the MK7VA. The MS6 is a sound module with two oscillators per voice, mixable wave forms, velocity and aftertouch response, 256 preset sounds and 128 programmable memories. It's also multi-timbral, so you can play up to six single-note sounds at once. At £274.95, you'll still pay less for an

MK7VA keyboard and MS6 synth module together than you would for some less well-specified Japanese synths.



Cheetah Marketing, Norbury House, Norbury Road, Fairwater, Cardiff CF5 3AS Tel: 0222 555525

PC WONDER BOARD

Fancy plugging a full-spec FM synthesiser into your PC? Audio Digital Technology are bringing out a new expansion card for PC compatibles offering a built-in MIDI port and Yamaha synth circuitry that can produce 336 different stereo FM generated voices with 8-note polyphony.

Called the IBM Music Feature Card, the unit comes with editing software and is the result of collaboration in the US between IBM and Yamaha, but will be distributed exclusively in this country by ADT.

Additional software available separately to accompany the unit includes Yamaha's *Playrec* program which gives simple 4-track sequencing options together with up to 64 automatic accompaniments, of which 32 can be user defined.

Alternatively you could try Yamaha's *Compose* software, which gives up to 8-part composing ability together with printing, control of the Music Feature card, and the option to import data from real-time performance. The Music Feature card is also compatible with some professional MIDI packages - the Texture 2.5 Sequencer, for example, and Notation.

All this will set you back £395 (inc. VAT), which is by no means cheap - but then MIDI equipment for the PC never was. When you consider that you can pay around £180 for a MIDI interface alone, the package begins to sound more attractive. Contact ADT on 01 977 4546.

NEXT MONTH

Next month sees the beginning of a new-look music section for ACE. We'll be introducing our new Consultant Editor who'll be on hand to answer your queries each month, and will bring you all the latest music news and reviews in each issue. And don't forget - if you want to shape the new section, make sure you fill in the questionnaire on page 100 - and you could win a prize into the bargain!

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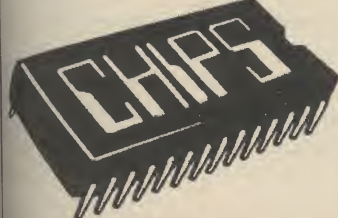
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